

THE AUTOMOBILE

"TO THE SUNNY SOUTHLAND!"



How Georgia Is Making Roads

and Columbia, and the route covered on the third trip coincided with the first as far south as Roanoke, and then turned southwesterly through a section of Eastern Tennessee but little known, by way of Bristol, Knoxville and Chattanooga.

After this thorough examination of all possible routes, one was decided upon and mapped and mileage by the writer; more than 2,000 signboards have been placed along the roads, and all is now in readiness for the first touring contest between North and South, which, beginning on Monday next, October 25, will "inaugurate"

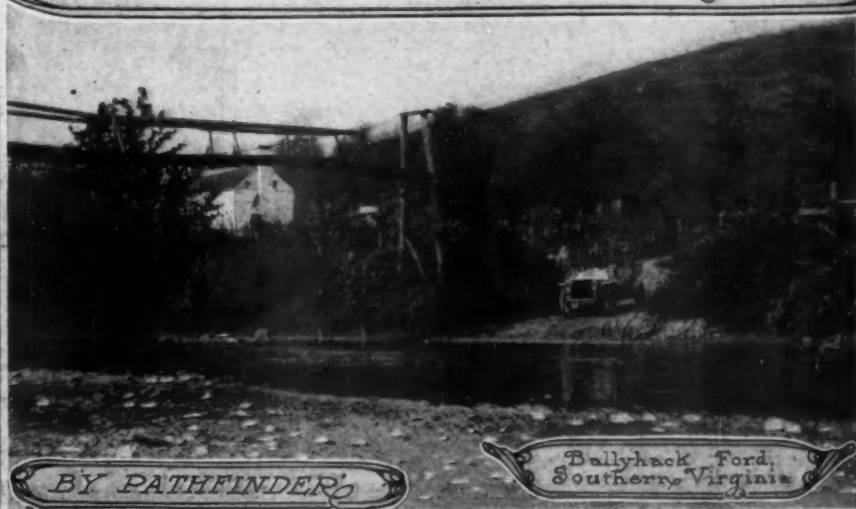
It was a by no means easy task for the promoters of the "National Highway"—the New York *Herald* and the Atlanta *Journal*—to select the route of the good roads endurance tour to the Gate City of the South. For other important tours held in this country fairly definite data as to the best roads have been available, and the only requisite has been to send a pathfinding car over the established route to compile specific road directions. But no sooner had the two newspapers announced their scheme of a New York-to-Atlanta highway, when advocates of different routes started to overwhelm the promoters with conflicting claims to superiority.

Obviously there was but one way to decide which route was the best—namely, by actually testing all of them. To that end, a White Steamer, during the Summer months, made three trips of inspection between New York and Atlanta, covering as many different routes. The first trip was over the "Shenandoah Valley-Southern Railroad" route; the second trip was over the "Capital-to-Capital" route via Washington, Richmond, Raleigh

the new highway between the Metropolis and Atlanta.

Those who made the three "scouting" trips were unanimous in the decision that the first route was the best, and, accordingly, the

via New York ~ Atlanta Highway



BY PATHFINDER

Ballyhack Ford,
Southern Virginia



White Gasoline Car Found This Good Stretch of Road Near Summerfield, Va.

White pathfinders on their recent trip covered, for the most part, the same roads as were followed on the first trip of exploration except that between Roanoke and Charlotte an entirely new route was marked out via Rocky Mount, Martinsville, Winston-Salem, Greensboro and Thomasville. The accompanying map shows the "National Highway" as finally determined upon.

Inasmuch as the pathfinders traveled over many miles of road which they had covered four months before, they were able to see the tremendous improvement which had taken place in the interval, this advance being due in no small measure to the active propaganda which has been carried on by the two daily newspapers most interested in the tour. A case in point is that of York, Pa. When the White "scout" car passed through this prosperous city last May the main street was full of holes and ruts and compared but poorly with the macadam pikes which lead from that city out into the farming districts. The city was properly "roasted" in the news and editorial pages of the New York *Herald*. The local York paper reprinted these criticisms, and the outcome of the agitation was that the city voted an appropriation to pave the main street. When the pathfinders went through York two weeks ago they found as fine a brick pavement as could be desired.

While driving the pathfinding car between Staunton and Roanoke, I found it necessary several times to alter my road direc-

noke to your city are the worst ever," was the reply. "Then we will fix them," rejoined Winston-Salem, followed by a spectacle which, I believe, has no precedent. A mass meeting was held in Winston-Salem and with great enthusiasm several thousand dollars were subscribed by private parties to be spent on the roads of another state! But that was not all Winston-Salem did in its eagerness to be on the "National Highway." It was pointed out that even if the road leading south from Roanoke was improved it might still be possible that the route would go to Greensboro direct and leave Winston-Salem out. "Well, we will fix that, too," said Winston-Salem. Accordingly the town officials got busy and started construction work on three miles of entirely new road, thus building a "cut-off" which makes Winston-Salem logically and naturally on the New York-to-Atlanta highway as planned and mapped.

Fairly good roads are found almost all the way from New York to Roanoke, but it is probable that those who take part in this month's New York-to-Atlanta tour will not soon forget the sixty miles of mountainous roads south of Roanoke. The difficulties of the road may be judged from the fact that, although a large delegation of autoists drove out to meet us on our way into Roanoke, not a single driver was willing to show us the way south from Roanoke the next day. However, the president of the Roanoke Automobile Club, J. H. Marsteller, kindly offered

to ride in our car and act as pilot. Mr. Marsteller is the most active motorist in that section, and yet he had never driven southward over the road leading from Roanoke.

The first stretch of 28 miles, from Roanoke to Rocky Mount, required 2 hours 40 minutes to negotiate. Perhaps fifteen minutes was spent in taking photographs and inquiring the way, but the balance of the time we were going as fast a pace as the road would stand. It is up hill and down hill—up and down without cessation. The road twists and winds around the mountainsides so one can rarely see what awaits him 50 feet ahead. The turns are very sharp and one comes unexpectedly to short grades as steep as



Roads Are Generally Excellent on the Popular Shenandoah Valley Route

any on Giant's Despair at Wilkes-Barre. Add to this that the road is rough and rocky, and one can understand why we did not average more than eleven miles an hour with a car ideally adapted for just such road conditions. The wonder is, not that the road in this section is so bad, but that it is as good as it is, for the country is almost entirely deserted. There are no farms, no pasture, and no traffic. It is on this stretch of road that the money raised in the North Carolina city of Winston-Salem is to be spent. Already some work has been done in leveling off the rocks which project into the road and in filling up some of the holes. By the end of the month it may be a fairly decent road over which to drive a car. From Rocky Mount to Martinsville conditions improve



The Scenery Is Picturesque Near the Piedmont Toll Bridge



somewhat, so that a schedule of 15 miles an hour may be suitable for the large cars in this month's tour.

North Carolina, as I have said in previous articles, has been leading the "New South" in the building of good roads. There are numerous fine straightaway stretches of flawless macadam where, for miles at a time, one may drive a car at its maximum speed without any fear of accident, as cross-roads are few and far between and traffic is light.

South Carolina has been doing wonders during the last few months in improving its dirt roads, which are the prevailing type in this State. The roads are, for the most part, smooth, well graded, and without sharp turns. In dry weather splendid time can be made in crossing this State; in wet weather the tourist had better provide himself with three or four sets of tire chains

and postpone his other engagements for a day or two.

Georgia, the pathfinders found to be literally torn up by gangs of convicts engaged in resurfacing the road. The counties are vying with each other in bonding themselves to build new highways, and the good roads enthusiast may say of this State: "Not yet, but soon."

At the present writing, nearly a half hundred cars have been entered for the tour. A noteworthy feature of the entry list is that more than two-thirds of the cars have been entered by private owners from the South. Some of these latter entries are to represent the boards of trade or chambers of commerce of various cities along the line. The rules of the contest are of the simplest possible sort, merely requiring the cars to travel on a definite schedule, with no questions asked regarding repairs or replacements; but no time is allowed for repairing tires and the contestants must do their filling, oiling, etc., on their own running time. Whether the contest will appear to be a tour or a "road race" to those making their first appearance in competition is a question which only time will decide. However, one thing is certain—after the tourists cross Mason and Dixon's line they will be welcomed, dined, fêted, and "barbecued" in every town where a noon-stop or night-stop is scheduled, and unless the tourists have a different experience than did the pathfinders, they can ship their pocketbooks home as superfluous baggage after entering the Sunny South.



Colored Road Workers Are Healthy, Busy, and Happy

WHAT LIES BETWEEN SAVANNAH AND ATLANTA

SAVANNAH, GA., Oct. 18—Shortly after 7 o'clock on a recent October morning, the scout pathfinding car, a Chalmers-Detroit, set out upon its 300-mile journey from Savannah to Atlanta to pick out the route for the endurance run to be held November 8.

The car started from the T. A. Bryson garage, going through the following towns on its way to Milledgeville: Pooler, Edam, Stilson, Brooklet, Statesboro, Sandersville, and then to Milledgeville for the night. This place was reached at 6.30 o'clock in the afternoon, after a good run. There being no record driving to see how quickly the trip could be made, the work consisted solely of photographing and obtaining route information for the run.

The first stop was made at Louisville, where a big reception was given to the party, and similar ones followed in Sanders-

ville and Milledgeville. In each town the county commissioners and mayor would come out and greet the car, and would sign the pledge to help to boost the good roads movement that has just now set this part of the country wild.

At Louisville a big spread was supplied, and after this the Savannahians were taken for a ride to the boyhood home of President Battey of the Savannah Automobile Club. At this place a battle took place between the auto crowd and a rattlesnake, in which the snake lost its life.

At Sandersville the party was met by Mayor Evans, who served as guide. Leaving here, the party was met half way by Mayor Bell, Milledgeville, who escorted the procession to that place.

The best roads on this part of the journey were found in Jefferson, Washington, and Baldwin counties. The roads in Jefferson county are already complete and in good condition. In

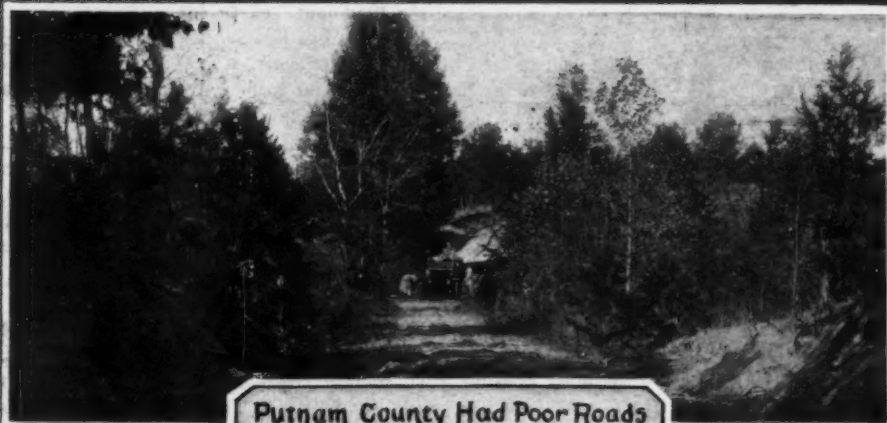
Baldwin county large hills have been cut away to make the road. The roads in Washington county are torn up a little because they are beginning to grade them for the run. Other good roads were found in Burke and Jenkins counties, but these were a little sandy because of the lack of rain for several days. The time between Savannah and Milledgeville was 9 hours 10 minutes, the distance being 108 miles. At Millen, Sandersville, and Milledgeville gasoline stations were established for the run.

After staying overnight at Milledgeville, the party left at 8.30 the next morning with James L. Sibley, postmaster, as leader for the entire run to Atlanta. The following cities were visited and in each a big reception was given to the car: Eaton, Madison, Social Circle, Covington, Lithonia, Redan, Stone Mountain, and Dictur.

The trip from Milledgeville to Atlanta was made in eight and a half hours, but four of these hours were consumed in stops on the way. The roads in Putnam were found excellent, which made the running most enjoyable. In Morgan county the roads became poor. At Newton the commissioners are still working on the roads, but will have them in shape for the run. The roads of Dekalb county were rough, but will soon receive attention.

At Lithonia a party of Atlantians met the pathfinding party, among them being Col. J. R. Grinn, of the Atlanta Automobile Association; Police Commissioner C. Mason; H. L. Wilson, of the General Motor Works; C. R. Tyce; T. I. Ryan, of the Fourth National Bank; Chairman Whiting, of the reception committee, and J. F. Lewis, of the Atlanta Constitution.

Arriving in Atlanta, the car was taken through Peachtree and Whitehall streets, and then to the Atlanta



Putnam County Had Poor Roads



Road Building in Jenkins County



Near Millen, in midst of Sugar Cane

Automobile Association clubhouse, near Hapeville, via Stewart avenue. The odometer showed that on arriving in Atlanta the car had travelled 289.8 miles during the whole trip.

On the return to Savannah, the car left Atlanta Thursday morning, taking the old Capitol route. It is said that between thirty and fifty cars will participate in the run and try to capture the large prizes that will be presented.

The night stop on the run will be in Milledgeville, which will be reached about 6 o'clock in the evening. The cars will be divided as follows: Class C, cars costing \$1,250 or under, speed of 15 miles an hour; Class B, cars costing \$2,000 down to \$1,250, speed of 15½ miles an hour; Class A, cars costing over \$2,000, speed of 16 miles an hour.

The following cars were entered up to last Saturday: Three Packards, three Stevens-Duryea, two Chalmers-Detroit, two Carters, one Crawford, one Acme, one De Tamble, one Buick, one White Steamer, one Cadillac, and one Reo.

NEW YORK TO BIRMINGHAM

BIRMINGHAM, Ala., Oct. 17—The Interstate Good Roads Convention passed the following resolution:

Be it resolved by the Interstate Good Roads Convention now in session at Birmingham, Ala., That the suggestion of the Birmingham Board of Trade is hereby commended for an automobile route between Birmingham and New York by way of Chattanooga, Knoxville, Tate Springs, Bristol and Stanton, following the valleys between Appalachian ranges and not crossing the mountains.

THE GOOD ROADS TOUR

For the Good Roads tour which will start from Herald Square, New York City, October 25, for Atlanta, these entrants had been filed up to noon on Wednesday of this week, with indications of several additional ones before the list closed. The total is 50 with 27 different makes represented.

Entrant and Address	Car	Class
Chamber of Commerce, Atlanta.....	Benz Runabout	1
Read Holiday, New York.....	Chalmers-Detroit	4
Carl N. Page, New York.....	Chalmers-Detroit	3
Renault Branch, Paul Lacroix, New York.....	Renault	1
R. M. Owen & Co., New York City.....	Reo	5
York Motor Car Company, York, Pa.....	Pullman	4
York Motor Car Company, York, Pa.....	Pullman	4
Matheson Automobile Co., New York.....	Matheson	1
Maxwell-Briscoe Motor Co., Tarrytown, N. Y.....	Maxwell	4
Maxwell-Briscoe Motor Co., Tarrytown, N. Y.....	Maxwell	4
Maxwell-Briscoe Motor Co., Tarrytown, N. Y.....	Maxwell	6
John W. Grant, Atlanta.....	White	2
Board of Trade, Commerce, Ga.....	White	4
Edward H. Inman, Atlanta, Ga.....	Stevens-Duryea	3
Colonel John J. Woodside, Atlanta.....	Thomas	1
Anderson, S. C., Chamber of Commerce, Dr. W. E. Atkinson.....	White	2
F. D. Hughes, New York.....	Chalmers-Detroit	4
Mrs. E. A. de Giers, New York.....	Thomas	2
Colonel W. L. Peel, Atlanta.....	Stearns	1
Moultrie, Ga., Board of Trade, W. E. Aycock.....	White	3
Spartanburg, S. C., Chamber of Commerce, J. T. Harris.....	Bulck	4



Ogeechee Road Bridge, One Mile Long



Statesboro's Roads Looked Good



Near Blitchton Roads Are Rough

Entrant and Address	Car	Class
Alfred Austell, Atlanta.....	Apperson	2
City of Salisbury, N. C.; C. W. Smith.....	Overland	1
Atlanta Auto. Assoc., by Asa Candler, Jr., President.....	Pope-Toledo	1
Winston-Salem, N. C., Board of Trade; F. S. Vernay, President.....	E. M. F. Studebaker	4
Forrest Adair, Atlanta.....	Stevens-Duryea	3
William Oldknow, Atlanta.....	Buick	4
J. Lee Barnes, Atlanta.....	Thomas	1
Automobile and Commercial Associations of Charlotte, N. C.; J. H. Ham.....	Maxwell-Briscoe	5
W. J. Stoddard, Atlanta.....	E. M. F. Studebaker	5
City of Charlotte, N. C.; A. Burwell, Jr.....	Premier	3
Jacques Futrelle, Scituate, Mass.....	Jackson	4
Henry J. Lamar, Jr., Macon, Ga.....	Oldsmobile	1
Charles I. Ryan, Atlanta.....	Thomas	1
Col. Jas. W. English, Jr., Atlanta.....	Thomas	1
Pennsylvania Agency, Atlanta, Ga.....	Pennsylvania	2
White Star Automobile Co., Atlanta.....	White Star	4
Lawrenceville, Ga.; W. L. Brown.....	Buick	5
G. W. Hanson, Atlanta.....	E. M. F.	5
W. A. Kelly, New York City.....	Knox	2
Lynchburg, Va., Chamber of Commerce, by Carter Glass.....	Pope-Toledo	2
Evelyn Harris, Atlanta.....	Selden	3
Metz Company, Waltham, Mass.....	Metz	6
Metz Company, Waltham, Mass.....	Metz	6
E. D. Crane & Co., Atlanta.....	Regal	5
The Official Automobile Blue Book Publishing Co., N. H. VanSicklen, Sr.....	Apperson Jack Rabbit	1

VANDERBILT ENTRANTS ARE PRACTISING ON COURSE

PRACTICE over the Vanderbilt course on Long Island was scheduled to begin Monday morning; the 22 special flagmen were on duty, and all traffic was carefully diverted to other roads during the prescribed hours, from 5 to 8 a. m. However, the flagmen and several hundred spectators gathered at Hicksville were all disappointed, for not a single car appeared. It was learned afterward that most of the drivers had planned to begin Wednesday, sacrificing two days in order to have their machines prepared for fast work as soon as they were brought out. The corps of flagmen demonstrated their efficiency, however, and, viewed as a little private practice for their benefit, the day's work was a great success. Wednesday morning the daily practice work had its beginning.

The course has already been brought into very fair condition. The oiling and the banking of the corners has been completed, and all of the holes and ruts in the country roads have been filled in with the best of Peekskill gravel. Only a few rough spots remain to be rolled down. Manager Pardington has prepared special number plates which will be hung on the radiator of each practicing car, and none of these numbers will be issued except to *bona fide* entrants who have paid their entry fees. In order that the spectators may identify the cars, it has been arranged that those entered for the Vanderbilt Cup proper will carry numbers 1 to 29; those entered for the Wheatley Hills Sweepstakes will be numbered from 30 to 39, and those in the Massapequa Sweepstakes from 40 to 49. These numbers are only provisional, however, the numbers in the actual race will be drawn for later, although the system will be the same.

The policing arrangements, it is expected, will be a great improvement over previous years. Sheriff Joseph H. Foster, of Nassau county, has organized a large force of men who will be posted at the police and flag stations, marked by a yellow placard and numbered consecutively. Acting in conjunction with the sheriff, the Pinkerton detective agency will have about 400 picked uniformed men on duty. This force is to be drawn from all parts of the country, and most of them will be men who have seen duty in strikes and riots in various cities. Those who remember the Vanderbilt crowds of former years will agree that such experience will stand them in good stead. All of these men will be sworn in as peace officers, will wear caps and

sheriff's badges, and will be provided with police night-sticks, which they are instructed to use if necessary. Flagmen, deputies, and Pinkerton men will be placed at an average of about 100 feet apart around the whole course. The management will endeavor to keep the course clear until at least five cars finish.

The box-office reports are extremely promising, and an extra force of men has been working at the headquarters, Forty-third street and Broadway, sending out the pasteboards. The grandstand contains only about 5,000 seats, and from present indications double that number will hardly satisfy the demand. One-quarter of the 300 boxes have already been sold. The arrangements for reserved parking space, which caused some dissatisfaction last year, have been altered so as to insure a satisfactory view of the competing cars as they approach and pass.

Twenty-two entries have been received at present.

Four Chalmers-Detroit cars will participate, their pilots being the veteran team, Lorimer, Dingley, Matson and Knipper. They have rented a house in Garden City as headquarters.

The foreign contingent is represented by two Fiats, one of which will be in charge of Hearne, the young Chicago amateur, and the Isotta, which finished second last year, to be handled by Joe Seymour.

George Robertson may drive one Simplex and another of the same make is also entered.

Others are the Alco, H. F. Grant; the Apperson, Hugh Harding; the Marion, George Riess; two Buicks, in charge of Chevrolet and Burman; two Nationals, to be driven by Merz and Aitken; a Moon, an American, two Marmons and three Maxwells.

The entry list does not close until September 25, but late entrants will have to confine their practice to the Motor Parkway, as the county supervisors have announced that they would not issue permits after last Monday. Renault, Stoddard-Dayton, Knox, Rainier, and Sharp-Arrow are still expected to appear at the starting line.

The race starts at 9 a. m., October 30. The distance for the Vanderbilt Cup contestants classes 1 and 2 is 278.1 miles, 22 laps of the 12.6 mile course. The Wheatley Hills Sweepstakes, for class 3, will go 15 laps, 189.6 miles, and the Massapequa Sweepstakes, for class 4, 10 laps, equal to 126.4 miles.

NO. 13 PACKARD, FLETCHER DRIVING, WINS BRAZIER CUP

PHILADELPHIA, Oct. 16—High winds, chickens and the number 13 played a prominent part in deciding the winner of the seventh annual renewal of the Brazier cup contest, that pioneer among automobile competitions promoted annually by the Automobile Club of Philadelphia.

There were thirteen contestants, and car No. 13, G. B. Fletcher's Packard, won with just exactly 13 points penalty against it. The trail over the 65-mile course, which wound rather aimlessly over the excellent country roads in Montgomery, Bucks and Philadelphia counties, in juxtaposition to the city, was laid with confetti and corn. That was where the high wind and the chickens came in, for whereas the former lifted the flimsy paper and whirled it into the beyond, the latter camped on the trail during the hour or more that elapsed between the passage of the pilot car and the arrival of the first contestant, and devoured every scrap of evidence! The result was that many of the contestants lost their way and had to return. On one stretch—that between Conshohocken and Neshaminy, where the wind was either exceptionally high or the fowls particularly hungry, or both—no less than nine of the cars went astray.

Fletcher was among the few lucky ones and lost little or no time by missing the way. He accumulated his lucky 13 demerits

by passing the hidden checkers either ahead or behind his official time. These checkers were secreted at several points unknown to the contestants and registered the time each car passed them. These lists were then compared with the times each car should have passed the several points, and any variation meant one point for each minute out of the way.

C. Yarnall Abbott, in a Pennsylvania, was second, with 23 demerits; Alan Wood finished third with his Pope-Toledo, accumulating a total penalization of 28½ points, and W. C. Longstreth, Pullman, captured fourth place with 39½ bad marks. The other contestants were: Alan Corson, Buick; Henry P. Baily, Winton; P. M. Elsasser, Winton; J. H. Schenck, Jr., Winton; G. M. Sailer, Packard; W. Stewart Harding, Autocar; George D. McCreery, Jr., Buick; E. C. B. Fletcher, Packard; D. Walter Harper, Stanley steamer.

The majority of the contestants had their families with them and the affair was voted a delightful social success. One of the rules required that the owner drive.

This being the third win for Fletcher, the Brazier cup becomes his permanent property. It is whispered that he may return the cup to the club for further competition; otherwise the most ancient of annual fixtures may be missing next year.



Line-Up of Brighton's Record "24": No. 4 Lozier (2d); No. 3 Lozier (1st); No. 9 Rainier (3d); No. 10 Marmon (5th)

BRIGHTON BEACH'S concluding 24-hour race of the season had record speed and a Lozier six-cylinder winner, with another car of the same make as the runner-up. Swept by ocean breezes in late October, the Brighton track did not present an inviting appearance, with the result that the crowds of previous 24-hour races failed to gladden the hearts of the Motor Racing Association officials in the interval between 8 p. m. Friday and 8 p. m. Saturday. But neither the weather nor the absence of spectators prevented the demolition of the American one-mile circular track records, and the course evidenced much improvement and presented a reasonably smooth surface.

The winning Lozier accumulated a mileage of 1,196, which was an improvement of 19 miles over the previous record of Robertson and Lescault, made with the Simplex in October, 1908.

Mulford and Patschke formed the winning combination of drivers, with Cobe and Seymour in charge of the other Lozier, which traveled 1,169 miles and excelled anything previously done on Brighton track this year. Both cars used Diamond tires.

The starting line was graced by the presence of Dr. Frederick A. Cook, of Arctic fame, who for the occasion wielded the official pistol. The nine cars got away to a straggling start and were strung around the track before five miles had been covered. Chevrolet took the lead for ten miles.

Then the Palmer-Singer, with Howard at the wheel, gradually worked ahead and held the lead until the twenty-fifth mile, when

Chevrolet again got ahead. The Buick driver kept up his fast pace until he had set new records for one and two hours. Burman with the second Buick was now in second place, and soon after succeeded in passing his team mate, himself making the record for the third hour. Chevrolet had trouble and Seymour and the Lozier slipped into second place.

The first accident occurred before the completion of the first hour. As Cobe drove his Lozier into the homestretch a rear tire flew off and struck him on the head. Cobe was half stunned, but kept control. Seymour took his place after the car had lost nearly a lap. Soon after midnight the Palmer-Singer got into trouble. As this car, with Lescault at the wheel, was rounding the turn into the homestretch its front wheel came off and hurtled into a group of spectators. It struck Miss Alice Robertson, of Brooklyn, fracturing her collar-bone. Lescault handled the car well and brought it to a stop without any further serious results. It resumed racing as soon as another wheel was put on.

The Rainier Company for this race had placed its two star drivers, Disbrow and Lund, on the same car, and had entrusted its second entry to Wally Owen and Charles Bowers. At 6:45 in the morning, Bowers driving, the Rainier's right rear tire burst on the clubhouse turn, and the car went through the fence, turning over twice. Bowers sustained a fractured skull, but will probably recover.

Louis Chevrolet began to have his troubles soon after estab-

COMPLETE RECORD OF THE BRIGHTON BEACH 24-HOUR RACE HELD OCTOBER 15-16, 1909

No. Car and Drivers	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Previous Record.....	55	107	158	211	265	305	356	408	455	508	559	613	658	710	761	810	887	903	949	992	1041	1086	1131	1177
3 Lozier.....	48	103	152	207	257	309	353	403	454	507	560	612	652	703	752	802	853	904	951	1001	1050	1096	1145	1196
Mul'd, Patschke																								
4 Lozier.....	52	106	155	206	262	308	357	409	461	511	563	610	664	712	763	808	833	883	920	977	1027	1072	1120	1169
Seymour, Cobe																								
9 Rainier.....	42	87	139	185	230	278	326	391	427	480	529	578	623	670	716	759	808	848	890	937	985	1028	1070	1115
Disbrow, Lund																								
5 Buick.....	56	114	167	208	262	318	362	401	447	495	540	593	624	679	731	774	809	842	889	924	969	980	1012	1064
Burman, Hughes, L. Chevrolet																								
10 Marmon.....	47	96	141	189	232	269	297	319	326	353	380	415	460	496	544	583	620	662	704	742	782	814	859	904
Strang, James, Flanagan																								
11 Matheson.....	39	96	146	195	239	288	339	355	355	365	396	438	482	529	572	619	630	670	709	745	796	837	874	891
Basle, Whalen																								
6 Buick.....	56	114	164	217	267	321	372	422	472	523	570	624	647	668	719	764	Broken steering knuckle.							
L. Chevrolet, A. Chevrolet																								
8 Rainier.....	52	107	155	210	261	310	353	399	449	496	546	546	546	Through fence.										
Owen, Bowers																								
2 Palmer-Singer.....	53	107	153	203	222	222	228	279	319	359	359	359	359	Burnt-out bearing.										
Howard, Knipper, Lescault																								

Note—Heavy faced figures indicate new and existing records.



Polar Explorer Who Started All the Trouble
Dr. Cook and a Number of the Other Officials of Brighton "24"

lishing a record for twelve hours. At 10:45 in the morning his rear axle snapped, and the frame was bent by the resulting shock. Repairs were made, but about an hour later Louis' brother, Arthur, who had taken the wheel, went through the clubhouse fence and struck a tree. Driver and mechanic were hurled twenty feet through the air, but escaped injury. The car was wrecked. A little after noon the steering gear of Lozier No. 4 went wrong, and the driver had to ditch the car to escape a collision. Little damage was done, and the Lozier was soon back on the track. About the same time James, driving the Marion, took the far turn so fast that his car skidded and turned completely around. The officials decided that he was incompetent to drive, and put a man named Flanagan in his place.

A special prize of \$200 had been hung up for the greatest mileage made in the last hour of the race. This was at first believed to have been won by Buick No. 5, but at a later meeting of the M. R. A. it was announced that this prize, too, had been taken by Lozier No. 3. Owing to the fact that all the cars were permitted to cross the finishing line after the 24 hours had elapsed, the Buick was at first credited with one mile too much. The Lozier made 51½ miles.

Ralph Mulford, one of the winning pilots, was married Friday just before the race started. The wedding day had been fixed at the time the race was scheduled for September 24, and when the race was postponed he refused to change the date of the happy event. He and his bride will start on their honeymoon with the \$1,000 cash prize and a bonus added by the Lozier Company.



The Maid and the Man
Mrs. Strang and the Famous Driver as They Appeared at Brighton

FAIRMOUNT WINNERS RECEIVE PRIZES

PHILADELPHIA, Oct. 18—There was a veritable love feast of gratified Quakers at Keith's Theater last Thursday night when the prizes won in last Saturday's 200 mile Fairmount Park race were distributed among the victors. The big playhouse was jammed, and after witnessing the rerunning of the main features of the race on the moving picture machine, Starter G. Hilton Gantert was introduced by Manager Jordan, of the theater. Gantert "started" Referee R. E. Ross, and the latter in a neat speech presented Harry C. Harbach, secretary of the Quaker City Motor Club, in whose fertile brain was hatched the idea of having an annual race in Fairmount Park, and to whose untiring labors no little of the success attending the event during the last two years can be attributed.

To Mr. Harbach fell the pleasant task of presenting the prizes to the winners. Robertson captured \$2,500 in gold and the \$1,000 MacDonald & Campbell cup; Dingley annexed \$1,250 in cash and the Autolight Company's gold watch, the latter for the most consistent work during the race; Harding, \$750 in gold, and Joe Parkin \$500 in the same yellow metal. The big, good-natured crowd insisted on speeches from each of the winners, but the latter were evidently out of their element, and the few words they uttered in response were hardly audible. Len Zengle, who was awarded \$100 in gold for the fastest lap (7:41), did manage to express his regret that he hadn't made all his laps in that time, but the elocutionary efforts of the others were not impressive. Numerous speeches, however, followed by representatives of the four institutions which profited from the proceeds.

POINT BREEZE MEET WAS DISAPPOINTING

PHILADELPHIA, Oct. 16—The combined "land and air" speed exhibition which was to have come off on the Point Breeze track this afternoon did not pan out according to expectations. The land end of the program came off all right, although the speed was not all that could have been desired, but the Curtiss aeroplane, in charge of C. F. Willard, which was to have given the Philadelphians their first view of modern aerial navigation, was prevented from spreading its wings by a howling gale which swept over the field. "I would be in the Delaware in two minutes if I went up in this gale," said Willard. So the 6,000 spectators, the majority of whom had come purposely to witness the first exhibition in this city, were disappointed.

The races were of the most perfunctory order, and were strung out in an effort to keep the crowd quiet until Willard could appear. In a best two out of three, five-mile heat match race, George Robertson and his Simplex were beaten in straight heats by Willie Haupt at the wheel of a six-cylinder Thomas. The times were 5:55 and 5:44. Robertson had his revenge in the five-mile free-for-all, which he won in 5:37, with L. J. Bergdoll and a Thomas second, and Haupt bringing up the rear. In a filler event Bergdoll beat Haupt two straight five-mile heats. A series of mile record trials netted 1:05 for Robertson, 1:08 for Haupt and 1:10 for Bergdoll. The promoters will endeavor to keep faith by having Willard later.

NEW NATIONAL FORTIES IN VANDERBILT

INDIANAPOLIS, Oct. 16—Two of the new National "Forties," of which the specifications have just been published, are entered in the Vanderbilt Cup race. These cars have four cylinders, 5 by 5 11-16 inches, double ignition with Bosch high-tension magneto and storage battery, a three-speed selective gear, shaft drive, 124-inch wheelbase and 36-inch wheels. This model during the present year has sold for \$3,750, but for 1910, in spite of the longer stroke and the lengthened wheelbase, the price will be cut to \$2,500. On the Indianapolis speedway these cars showed a speed of better than a mile a minute. John Aitken will drive one of the Vanderbilt cars, and either Merz or Kincaid the other.

UP-TO-DATE ACCESSORY FEATURES OF RADIATORS AND PUMPS

By Thos. J. Fay

Part 1



Fig. 1—McCord System of making tubing from long ribbons of sheet brass, at a rapid rate and well, with a seam which adds strength

ACCESSORIES are made in separate shops to a vast and growing extent and assemblers of automobiles depend upon these specialists for much of the excellent results realized. Even the makers of automobiles who bend every effort to build as much as possible of the whole car under one roof go to accessory makers for such units as radiators, oilers, the ignition system, and tires.

Parts makers, then, are of great and growing importance to the well being of the industry, and it has been shown that, as a rule, these specialists make as good, if not a better, showing than is frequently indicated by shops in which the attempt is to cope with the whole problem in diversified form, it being the case perhaps that "a jack of all trades is a master of none" in this as in other walks in life.

Logic and Truth Not Always Parallel—The "farming-out" process has its faults, among which lack of interchangeability is uppermost. In any attempt to reason that all parts if made outside will lack in this quality, basing the reasoning on the results attained from the farming-out process, a fallacy will be concealed. There is a vast difference between farming-out parts of units and purchasing a whole unit from a regular maker of the same. A crankshaft, for illustration, is but a part of a unit (the motor) and if it is farmed out when it is made it may not fit into place. A radiator, on the other hand, is a whole unit; it

is delivered complete; the limits of tolerance, involving its fit in the chassis, affords an ample range of variation and there is absolutely no reason why the whole unit may not be made in a plant devoted to radiators and when delivered, fit in the chassis to the entire satisfaction of all concerned.

What the Practice Is in One Shop—

In the respective plants there are bound to be differences in methods, and in a general way, owing to changing types of equipment and on general grounds, it may be necessary to describe the process in each plant in order to see the whole situation. In the main, however, from the user's point of view, a good understanding of what it means to build accessories will be gleaned if the process in some one plant is illustrated and described. For this purpose the plant of the McCord Manufacturing Company, at Detroit, Mich., has been selected and Fig. 2 is of the regular form of McCord radiator showing the front at A and B is of the other side. This type of radiator is used on cars when a pump is provided for purposes of water circulation. The radiator shown in Fig. 3 differs from the one in Fig. 2 in important particulars; it is for thermo-syphon work, but as a thermo-syphon radiator it is a special form as used in Regal cars made by the Regal Motor Car Company, located at Detroit,

Mich. These radiators are of the vertical-tube type, in which rows of brass tubing disposed vertically, the same 1-4 inch in diameter, are nested with about 24 tubes to the row, the exact number differing in the different cars, depending upon the distance across, and the number of rows used is regulated by the motor requirement. In the Hudson car, for illustration, which is the car on which the radiator, as shown in Fig. 2 is used, there are three rows deep and 24 tubes to the row, making in all 72 tubes in the radiator. In the Regal "30" the radiator, as shown in Fig. 3, has five rows of tubes and there are 25 tubes to the row, making 125 tubes in all.

In order to increase the radiating surface of the tubes they are nested in a set of horizontal flat plates, of which there are enough to reduce the spacing or pitch of the plates to about 1-4 inch. The tubes are made of brass by a process, as shown in Fig. 1, by a machine which takes a spool of brass ribbon in at one end and delivers tubing the length of the ribbon at the other. It is a simple and rapid tube mill which reduces the ribbon to tube formation, a section of which is shown in Fig. 4.

After the tubing is made it is cut to lengths and dipped in a bath of solder, as shown in Fig. 5, when it is ready to go to the assembling process which requires the use of a machine, as shown in Fig. 6; its function is to press the flat plates over the nest of tubes. The tubes are held in a form while the work is

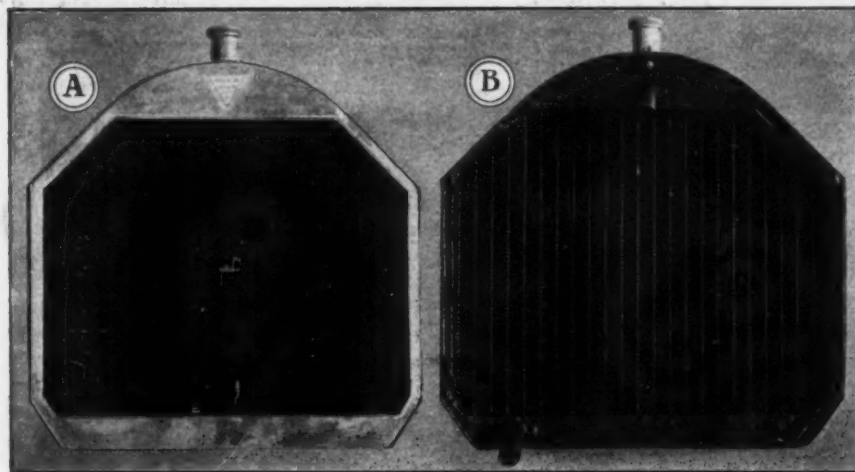


Fig. 2—McCord type of radiator as used on Hudson cars, designed for water circulation with a pump

being done and the holes in the plates are so sized that the tubes press tightly against the metal of the plates with results, as shown in Fig. 7, and the metal of the plates is turned down, thus increasing the surface of contact several hundred per cent. and the efficiency of the radiating surface to a vast extent.

Soldering Increases the Effectiveness—While it is true that the soldering process through which the tubes are put is a safeguard against any possible leak, the fact remains that the tubes are tight, almost without exception, as they come from the tube mill and the solder has a more important function to perform. When the assembly is made by use of the press, as shown in Fig. 6, the whole is taken to an oven and heated to a temperature sufficient to melt the solder. Since the radiators are placed in the heater with the tubes in the vertical, it follows that the solder runs down and forms fillets at the junctions of the plates, as shown in Fig. 8, and the section of conducting metal at the point of contact of the plates with the tubes is increased very materially and the radiating effect is therefore vastly increased.

In order that the front of the radiator will look uniform and take on an artistic appearance the plates as used are fashioned with a wire binder, as illustrated in Fig. 9, which is enlarged to bring out the point to be made. The binder is in the shape of a length of wire which is turned under and acts as a stiffener for the plates, which, in the absence of this binder, would scarcely offer an adequate measure of rigidity.

When the internals of the radiator are made much as shown in the illustrations it is a simple matter to slip them into their casings and after soldering them they are subjected to a test to determine if there is a leak or a mechanical weakness at any

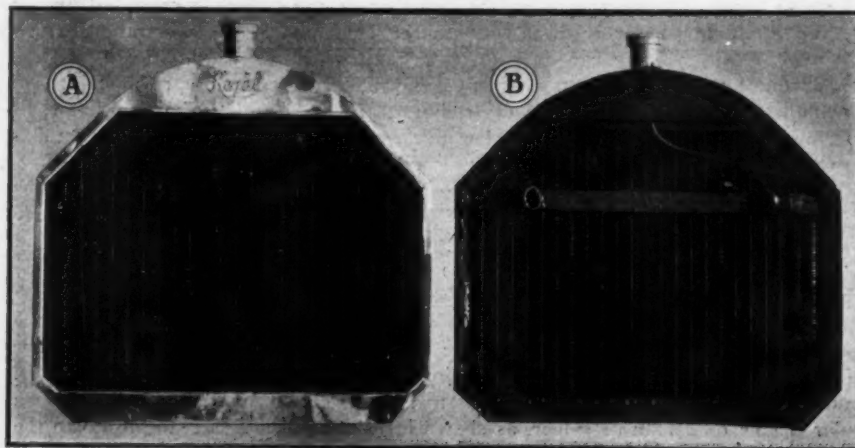


Fig. 3—Regal type of thermo-syphon radiator, utilizing energy of steam to add to circulation of water

point. For the rest it is a matter of finishing in black enamel for the tubes and plates and laquer over the remaining bright surfaces.

The finished radiators are light, strong, and in view of the unquestioned quality residing in them, it is interesting to note that this same quality would be at much extra cost were it not for the special processes employed. Many of the important details are omitted from the discussion since they are of little interest excepting to the maker, it being the idea here to show that quality is only possible (at a reasonable cost) if special processes obtain and it is needless to say that these methods did not come in a day and must have resulted after the expenditure of a pretty penny suitably mingled with skill.

Conditions as Demanded in Practice—

The ability of any radiator is absolutely independent of the motor on which it is placed for the purpose of absorbing the heat from the

jacket water. This fact is sometimes lost sight of and comparison is frequently made on a basis that leads to wrong conclusions. When it is desired to ascertain the required capacity of a radiator for a given motor it is first necessary to determine definitely the amount of heat that must be absorbed from the jacket water, and as should be well understood, this is a matter that depends upon the design of the motor and not upon the radiator.

In view of this and other conditions of more than a little importance, the McCord plant is equipped to investigate the whole situation for makers of cars in order to ascertain the best capacity of radiator to adopt in a given case. In the regular way it has been found that there are three conditions to be satisfied in the main, as follows:

(A) When motors are of the water-cooled type and a pump is used to maintain the circulation of water on a suitable basis.

(B) When the thermo-syphon system of water cooling is adopted under the conditions as here indicated.

(C) Considering the flame-swept surface in motor cylinders.

Water Cooling Has Certain Limitations—

There is a point beyond which the increased circulation of water adds but little to the result. This limitation is due to one of three considerations or a combination of them, viz.:

(A) Limiting value of air circulated over radiator surfaces of cylinders and radiators.

(B) Lack of ability of the water to take up heat from the radiator surfaces in direct proportion to water circulated after the speed of the water reaches a certain velocity.

(C) Effect of deposits of foreign substances over the surfaces brushed by the water.

It is perfectly feasible, of course, to do without a water pump if the ratio of flame-swept surface to radiator surface is properly adjusted. Under the circumstances it is one of the safe conclusions that the flame-swept surface of a cylinder should be reduced to the lowest possible value in square inches in com-

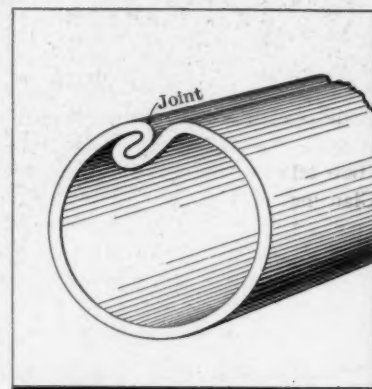


Fig. 4—Section of tube as made in McCord mill, showing how seam is overlapped and flattened down

parison with the piston displacement in cubic inches. This is a matter which depends largely upon the shape of the dome of the cylinder, it being the case that a hemispherical dome is the most efficient for the purpose.

If in a given motor it is true that the flame-swept surface is very great in comparison with the cubical displacement or horsepower of the cylinder, it will be a showing of wisdom on the part of the designer to adapt a water pump for purposes of circulation, and even then it will be wise to use a radiator of large capacity. Obviously, the amount of heat that the radiator will have to dissipate will be relatively large, since the flame-swept surface will be such that much heat will escape to the jacket water, requiring increased radiation.

Very Little Power Wasted—From the point of view of the power required to drive the pump it is almost enough to say that the power consumption is but slight, yet even so, there are some who would prefer to have the proof, and with a view to showing definitely just what this power requirement adds to the pumping losses of a motor, the curve, Fig. 10, of a centrifugal pump as used on the Thomas "Vanderbilt Racer" is here offered, which test was made in the Thomas laboratory, at Buffalo, N. Y. This curve shows that the power required is not far from 0.2 horsepower when the pump is handling about 100 pounds of water per minute under the head then taken, and while the opportunity affords, it might be well to point out one or two other interesting matters as shown on the same chart.

Glancing at the curve marked "gallons per minute," it will be noticed that "impending delivery" begins at 680 revolutions per minute in this case. In other words, the actual quantity of water that a centrifugal pump will handle below this speed is not worth taking into account, and in gearing a pump of this character, it is necessary to run the pump at a speed somewhat

higher than the crankshaft speed if it is true that the motor will do useful work at a relatively low speed. (Fig. 10, showing the curve mentioned and described will be shown in next issue.)

Contrary to the usual assumptions the power required is almost in proportion to the speed of the pump and the quantity of water is approximately on the same basis. Small pumps, as used on automobiles, do not conform to the laws of centrifugal pumps, even approximately, and it has also been found that altering the shape of the vanes has small effect on the result. If the vanes are curved it is almost a matter of no moment as to which way they rotate (with or against the curve), and it has also been found that, without any curvature at all, the results are very good.

It is fortunate that the performance of the pump is as shown, since the greatest requirement of water is when the motor speed is relatively low, and were the pump output to increase as the square of the speed the power required would increase in the same ratio approximately.

(To be continued.)

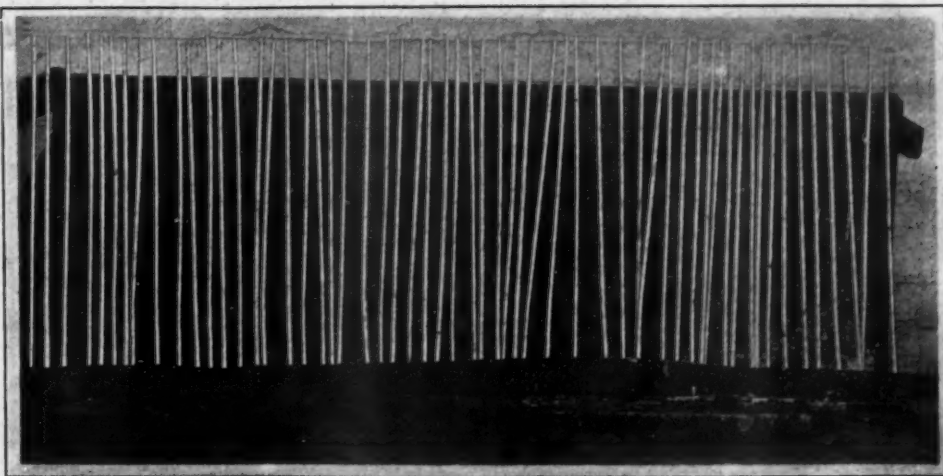


Fig. 5—Tubes, after they are cut to length, dipped in solder, and placed in a rack to drain and cool off before they are assembled

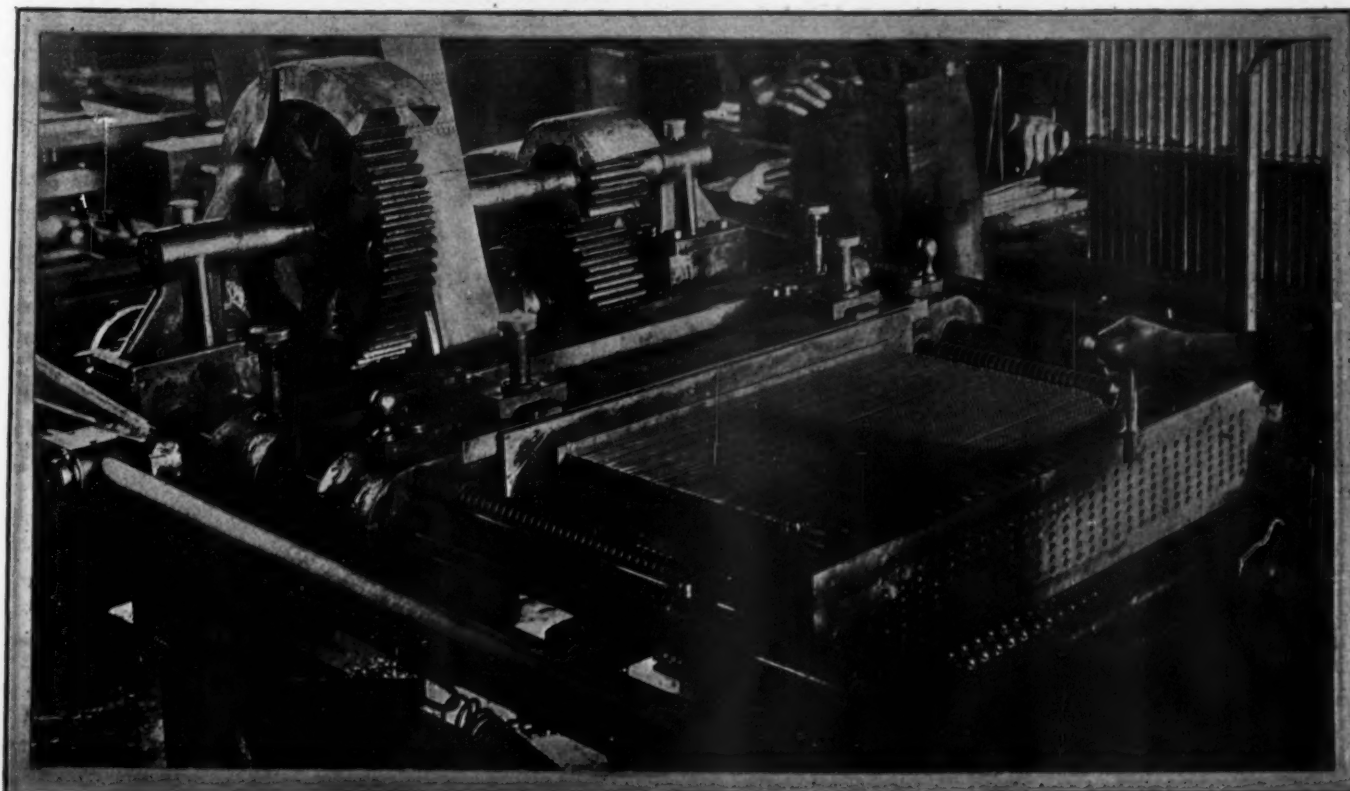


Fig. 6—Process and press, used to assemble McCord radiators, showing gill-plates being pressed on



COINCIDENT with the purchase and delivery of the first automobile the new autoist comes face to face with the garage problem. Shall the new "pride of the family" be kept in a public garage or shall some roofed building be adapted or specially built for it? These questions as well as many others of a similar nature and correlative to them are of real, live interest to the new owner. Or, perchance, being a forehanded man, perhaps this problem has been the source of much time and thought previous to the purchase of the car.

At any rate, the problem exists and must be solved at once. Unless the owner be a wealthy man or an exceedingly careless one, it is doubtful if the public place will be satisfactory with its high charges for either live or dead storage and excessive overcharges for the slightest item out of the ordinary, to say nothing of the irritating delays in washing, repairing and other things. In not a few cases, outside of the largest cities, of course, the charges at the public caretaker's place would be beyond modest means and slender pocketbooks.

Of course, no wonderful profit attaches to the simple storage and washing of cars, but the charges for the latter service are not lowered any on account of the prospective profits.

Private Garage Best for Private Citizen—All of which soon leads one to the inevitable conclusion that when conditions, such as geographical location in a small town or the outskirts of a large one and other things which enter in, are right for building or the adaptation of an existing building, this method, resulting in a private garage for every citizen, is best.

Granting, then, the necessity for the private building to house the new car, and another question of equal weight and gravity pops up, requiring like the first immediate attention and a quick decision. This is, "Shall I adapt a barn, cottage, outhouse or part of the basement of my house for this purpose, or shall I build a special building exclusively for this purpose?"

To consider this briefly, suppose that an unused barn can be converted so as to serve the immediate purpose for the cost of a new floor, and the installation of water pipes for washing purposes, amounting to, say, \$50. If a new garage house is figured to foot up \$250 the former is very liable to be the choice. If, on the other hand, this is chosen, and not being fireproof, burns down and the car with it, not only is the expense of fitting up the barn wasted, but the cost of the car as well. Or, if the roof leaks and destroys the upholstering and paint so as to call for retrimming and repainting at a cost of \$200, there was no saving in the made-over barn.

The use of a cottage in the rear or nearby, of a room in the basement or elsewhere, and other similar methods may be ranked with the foregoing as makeshifts which are liable to be very expensive in the long run, more so than the special house would

have cost in the first instance. So, far from being a matter of waste of money, the special house represents an economy.

Special Building Offers the Greatest Advantages—Reviewing the above, it seems as if the cheapest way out is the construction of a small building for this specific purpose. In this there is a chance for every man to show his originality, and the building should be such as will reflect the personality of its owner in outward appearance, in internal arrangement, or in its appointments. The latter presents a subject to appeal to the ripest judgment, since into its puzzling decision enters the question of economy. The man says to himself, "Shall I spend all of the money for the house, and buy tools and supplies later on as I need them, or shall I economize on the house and start with a full set of tools, thus saving all repair charges from the start? Or, shall I take an intermediate position, spending on the house what I think should be spent on it, buying tools and equipment with what money is left and adding to this later on as the need for special tools or supplies becomes apparent.

If a man has natural ingenuity and the ability to do work with few tools, the latter is by far the best course and one that gives the most satisfaction in the long run. The writer knows of a man who equipped a garage like this, buying a tool each time a saving was made which could be directly interpreted in money values. That is, whenever he did something on the car himself which saved him work at a public repair shop costing, say, \$2, he invested the money in a tool or tools amounting to this or less. In this way he accumulated a fine set of needful tools, and as he looks upon it, absolutely without cost to him.

This tool subject is one that must be given attention very early in the matter of a private garage, since, when the total amount to be invested is limited, any source of expenditure must be considered. As tools not only represent an expenditure, but if care is not used, a very large one, this matter should be the subject of much thought. Correlative with it and requiring solution equally early, is the matter of what portion of the total repairs the new owner will make himself. If he decides that he will make all of them and be independent of the repair shop, he will need more tools than will the man who decides to make only the simpler repairs.

Tools Which the Maker Furnishes, Usually—Bearing indirectly upon this, the tools which come with the car influence the result. The following is an extract from the catalogue of a high-grade maker:

A full supply of drop-forged and hardened tools, with tool bag, is furnished with each car, as follows: Jack, six engineer's wrenches, two monkey wrenches, four socket wrenches, two spanner wrenches, hub cap wrench, pet cock wrench, combination pliers, screwdriver, valve spring tool, cold chisel, ball pein hammer, oil can, tire pump, tire tools, and tire repair kit.

Other makers furnish, in addition to the above tools, water pail, hub puller and wheel puller. This equipment will, of course, vary with different makes of cars and the price of the same, the higher priced cars furnishing more tools than do the makers of lower priced machines. In general, the above may be assumed to be a fair outfit as furnished with a \$3,000 car.

Proceeding on the assumption that the above tools come with the car, it will be wise to sketch out about what extra tools the beginner will need. In case tools to this number and variety are not given free with the car, the assumption is that the owner will attempt to secure them within a reasonable length of time. Having these tools, then, it would be advisable to provide in addition, a stillson wrench of about 10 inches length open, which will take any size from 1-8 inch up to 1 inch, this being about as large a diameter as will be met with in gasoline-engine piping or tubing. The screwdriver supplied with the car will doubtless be all right, but a use will soon be found for other and different sizes, as this one will be a sort of general utility size. It is therefore advisable to purchase two additional at once and others later as the need arises. The two purchased should differ in that a small one with a wood handle will be needed for ignition purposes, one having a blade 2 inches long by 1-4 inch diameter being plenty large enough. For the other, a very long, moderate size comes in very nicely for inaccessible screws. A good size for this would be 10-inch by 3-8-inch blade.

Someone has said that it is possible to drive an automobile across the United States with no other repair parts than a bundle of wire. In the late Glidden Tour, three of the contestants carried no spare parts, only a roll of wire. In view of this, it is advisable to purchase a pair of wire-cutters. These come in several varieties, one being selected to suit the individual. Thus, nippers are for that purpose only, while side-cutting pliers may be useful in other ways. The price favors the latter, too.

Always Use a Soft-Headed Hammer on Threaded Shaft Ends—In assembling or disassembling, it is often, in fact, usually, necessary to pound or hammer on the end of a shaft or other part which is threaded at that point—that is, has threads right up to the end upon which the hammer is used. For cases of this sort it is not only advisable, but necessary, to have a soft-headed hammer. The heads can be bought separately either of copper or lead, the latter being both cheaper and more serviceable. They are cast with a narrow slot through the center, into which an ordinary hammer handle can be fitted in a few moment's time.

In case an ordinary hammer is used on a shaft end or other part and burrs up the threads or otherwise marks the finished piece, it will be necessary to use a file to take off the marks or protruding parts before the whole can be assembled. This calls for a file, which is not included in the tool kit. So, it will be well to buy a few files. These, too, will differ according to the nature of the work they are to do. Thus, for filing or, more correctly, dressing up, trembler points on coils, or sparking points on spark plugs and similar small, delicate parts requiring careful treatment, a very small, delicate file of the highest grade is an absolute necessity. Such a size is Nicholson's X F Swiss No. 6. In addition, a round file and one large flat shape is needed. For the former a 6-inch smooth cut will do, while the other should be a smooth, double cut of about 8-inch size. Others will be added later on, but these will do very nicely for a start and cost little as compared with their usefulness.

Money saved on files is a poor economy, since they never reach the end of their usefulness. A poor file is an abomination in the sight of a real mechanic anyway. So, pay the price asked for the best when you buy files.

Since to the beginner the whole ignition system is mysterious, it is a good plan to get a reliable check on the amount of current being furnished, which may be done by the use of a voltmeter and ammeter or a combination of the two in the form of a voltammeter. For this purpose an excellent instrument is one that reads from zero up to 14 volts and zero to 30 amperes, but this wide range is not wholly necessary and costs money. The beginner may get a perfectly serviceable instrument of narrower range for less money. This is used for checking up ignition cells, but as pointed out in a recent article in *THE AUTOMOBILE*, may be used to check up wasteful coils as well. It is a great help in time of ignition trouble, when the action of the two meters denotes some specific trouble, enabling the operator of the car to go right to that point, whereas another driver without it, would have to hunt for hours to even find the trouble.

Necessary to Have Some Shop Equipment, Too—If a man is to do all of his own repairing he will need a few shop tools—that is, he will have to equip his garage as a small shop. One of the most necessary things is a vise for holding a piece while work is being done upon it. This will, of course, need a work bench as a fixed support, but as that will be considered a part of the garage, under the heading of building and equipping the structure, it will here be taken for granted. In size it should be large; since an owner never buys but one, it is advisable to have it large enough to handle any work. If large, small work can be held in it equally well, while if small, there will always be some large piece to be worked upon, too large, in fact, to go within the jaws. A vise which opens to 3 1-2 inches will take any part of the automobile barring the piston, crankcase halves and gear case halves, which two latter are seldom put in a vise, so that they may be neglected. If it is desired to have a vise large enough to take the piston it will have to be one that opens 6 inches, for while very few engines have that diameter of piston, it should never be put in the vise and clamped up without copper-facing strips, which will receive the imprint of the roughened jaws instead of the machined surface of the piston.

This larger size will double the expense at least. Bearing the same relation to large stock (whether round, square or of some other shape) as do the nippers to small wire, is the hack-



An Old Barn Sometimes Makes an Excellent Garage Without Much Alteration

saw. This will be found very useful in many ways, and it is advisable to have one. The frame need not cost very much, but the working part of it, the blades, should be of the best. A cleanly man would purchase separate and suitable cans for oil, waste and gasoline, but this is not wholly necessary if economy be the order of the day. In purchasing oil and gasoline by the barrel wooden barrels are obtained (the ones in which they come) and the liquids may be kept in them and only drawn off as occasion demands. This is an excellent plan, since they are both cheaper by the quantity and the reservoir cost is saved. This plan has the disadvantage in that the fire risk is still present with the wooden barrels, whereas this is not so with fire-proof sheet-metal cans for that specific purpose.

All gasoline should be strained before using, since the quality of fuel grows steadily worse each year, so much so that to-day it presents a very large and serious problem. By straining all

troubles, which has been carefully compiled from thousands of experiences with repairs by one of the large tire companies:

CAUSES OF TIRE TROUBLES

SHOES

- 17.3 per cent in consequence of insufficient inflation.
- 3.5 per cent in consequence of rusty and dented rims.
- 1.5 per cent in consequence of cutting off of cover pad through inadequate fastening of butterfly screw, whereby the cover could shift on the rim.
- 1.8 per cent in consequence of sudden braking, which scoured through tire at one place.
- .2 per cent in consequence of contact with oil or other fatty substances, which are known to decompose rubber.
- 29.4 per cent in consequence of perforation by nails, stones and pieces of iron.
- 4.3 per cent in consequence of light damages and cuts on the threads, easily repaired.
- 4.9 per cent in consequence of considerable outer damages, whereby the upper canvas layers were destroyed.
- 37.1 per cent in consequence of normal wear and tear.

100

TUBES

- 13.0 per cent nipped in mounting.
- 7.2 per cent places scoured through in consequence of defective mounting or the presence of sand and small stones in tire.
- 9.5 per cent through defective mounting.
- 6.8 per cent through riding on deflated tubes.
- 5.8 per cent damages through defective and wrong cover holders.
- 16.0 per cent valve defects through wrong manipulation of valve.
- 43.7 per cent normal wear and tear.

100

From this it is immediately apparent that the driver of the car is responsible for much of tire trouble. This part of it is the one which might be helped by owning a vulcanizer, so that the little things, such as the "4.3 per cent. in consequence of light damages and cuts on the threads, easily repaired," mentioned above. This is an expensive outfit, however, and one that it would be inadvisable to buy at first, when there was a possible doubt as to the owner's ability to make his own repairs.

The same remarks apply to such items as taps and dies, which anyone can manipulate, but for which there would be no immediate necessity; in fact, there should be no use for them for many months of running. As a whole set, comprising about twelve of each, is rather high in price, the better plan is to wait until their use is a necessity and then buy them.

Some Idea of What the Whole Bunch of Tools Cost— Without going into the details of the various tools and things mentioned above, which, as explained before, are but a few of the total that one would like to have, and the least expensive, at that, it may be said that those described above should not cost in excess of \$20. This, however, is exclusive of the taps and dies, vulcanizer, cans of oil, waste and gasoline, but includes the voltammeter. Inclusive of these the total would be triple and from that upward, according to size and quality. Further on a number of special tools and ways of doing one's own work will be elaborated on, while special apparatus will be illustrated.

Having settled, then, upon the number and cost of the tool equipment, the amount to be spent determines to some extent the size of the house, as well as the construction. But, generally speaking, there are eight forms of construction possible. These are:

1. Wood,
2. Wood and steel in combination,
3. Steel alone,
4. Concrete,
5. Hollow tile,
6. Other forms of fireproof construction,
7. Concrete in combination with any or all of the others.
8. Brick or stone.

There are other forms of construction and some other methods of doing the work which really influence the situation, but which do not deserve to be classified as a separate form of construction. Thus, as a simple example of this, concrete may be made up into bricks or stones and then laid up one at a time, as bricks or stones would be, or it may be made all at once, moulds being constructed for the entire sidewalls, which are then poured.

One of the first things which the builder will want to know is the cost. This cannot be given except in a broad way, as conditions vary so much.

(To be continued.)



City People Are at a Big Disadvantage in Building Garages

that is put into the machine the amateur owner is doing all that lies within his power to do, since beyond that chemical changes are necessary to purify it further. A funnel with a gauze insert is good, and better, although slower, is chamois.

In building and equipping the place, the owner will provide lifting and shifting means for heavy and bulky weights, to be described more in detail later on, so that for the present the jack furnished with the car will suffice. Beyond this the other tools furnished and those suggested above, the man of limited means would need little else at the start. After some use every man doing all of his own repairing will need more complicated and more expensive tools of various natures.

For instance, one of the very first things to buy would be a vulcanizer, since tire troubles are many and various, and the charges at the public garage or repair shop, are equally many and various. Not only can much money be saved on immediate repairs, but it is thus possible to give the tires more intelligent care at all times, resulting in greater mileage per tire and lessening the per-mile cost of running. This necessity is more than apparent from an inspection of the following table of tire

CAUSES OF TIRE DEPRECIATION AND ACCIDENTS

ENTIRELY beside the question of the sizes and quality of tires, or the matter of inflation, there are material reasons why their life may be materially shortened, among which the following are prominent: If, for any cause, the axles sag, the load will come on the tires in such a way as to deflect them out of the plane of the wheels and rim-cutting will follow. Fig. 1 shows a prolific cause of axle sagging, due to the use of rather small stays for the axle and saddles of no great competence. If the stay jumps out of the saddle, the load will then fall on the unstayed tubing, and if it is so frail as to require the use of a stay, it will sag when the supporting pressure is withdrawn. When this class of trouble is found in a car, it will be best to put a preventer clamp on the stay, just at the saddle, thus holding the stay into the saddle; stays should be under quite some tension.

Parallelism Must Be Maintained—There is still another class of trouble, due to the lack of parallelism of the road wheels. It may be one or both of the front wheels that will be found out of line, and with a length of stout cord it will be possible to ascertain just which and how much. The front wheels

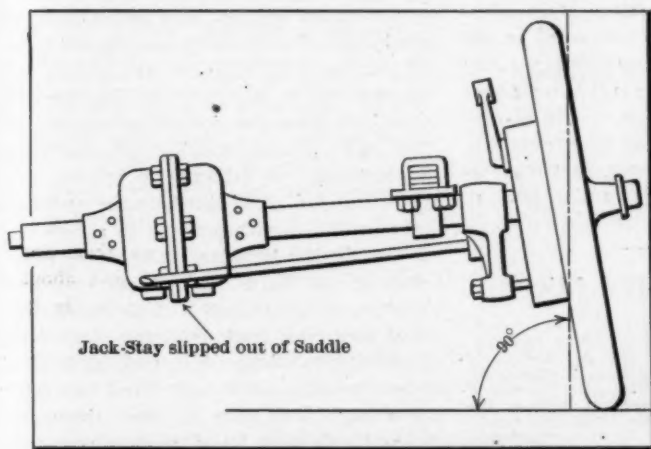


Fig. 1—Slack stay out of saddle, showing how axle sags in consequence

should be either parallel or they should toe in just a little bit. True, if they toe in they will cause wear on the tread of the tires, but it is better to have a suspicion of this trouble than to have them toe out. If the front wheels do toe out, steering will be attended by some additional difficulty, but if the toeing is slightly in, steering will be easier than when the wheels are exactly parallel.

If the wheels are parallel, a length of cord, when it is passed along from back to front, will just contact with the tire if the front and rear tires are the same size and equally inflated. If they are not the same diameter, the same idea may be used, but a rule, measuring from the felloes, will enable the workman to determine any difference existing. A long straight-edge, made of wood, will do this work very nicely, but there will be no difference in the principle, and in view of the clearness of the figure it is not believed that further explanation will be necessary.

Some Noise Emanates from Mud Guards—This year's automobiles are to be noted for silent performance if indications count, and makers of cars are paying much attention to valve and gear noises. In the meantime, since, in many cases, body work is done outside, with which mud guards are included, it will be well to remember that some of the former practices in connection with body work were not noted for noiseless performance. If stove bolts are used to fasten mud guards into place, it is highly improbable that the fastenings so made will prove to be secure, and just so soon as the nuts back off, as they invariably

do, noise will creep in only to destroy the otherwise excellent performance of the cars.

Fig. 3 shows a class of construction which is rather common, and, unfortunately, it is extremely difficult to fasten the flap of the mud guard since it passes down between the rear wheel

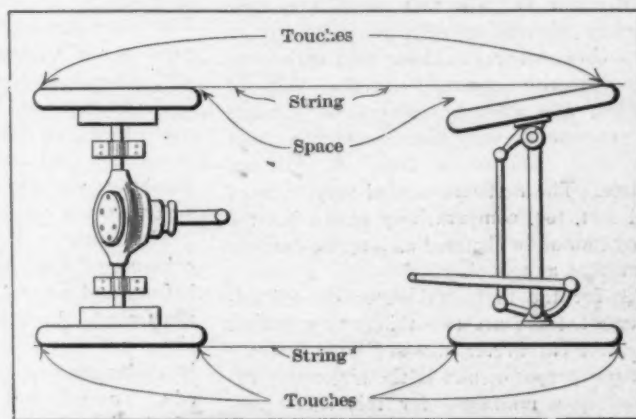


Fig. 2—Depicting one front wheel toeing out and method of lining up

and the rear spring suspension just at a point where there is nothing to tie up to. In any case, in view of experiences, it is necessary to do something about it, and if there is nothing to fasten to it is desirable to so fashion the "irons" that they will support the guards, and that better work on mud guards will bring its own reward is one of the points to be made.

Springs Should Be Tightly Clamped—While the subject is up, attention will be called to the most likely cause of spring failure. If the springs are not tightly clamped to the perches, they will fail in service, even if there is evidence of good designing, ample metal used, and a display of good judgment. By clamping the springs tightly they are prevented from deforming at the perch, which local deformation invariably ends failure; what is wanted is uniform bending over the whole length.

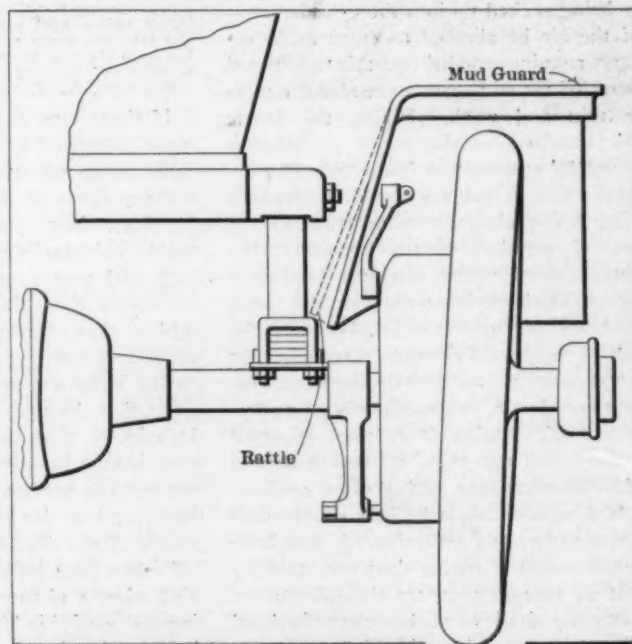


Fig. 3—Vibration causes the free end of the flap to interfere and noise is inevitable

HARD TO START "HER"

Editor THE AUTOMOBILE:

[2,059]—Will you kindly advise me through "Letters Interesting, Answered and Discussed," how to eliminate trouble in starting my 1907 four-cylinder car in the morning. I am a car with their own make of carburetor. I have to crank "her" over and over for about five minutes before getting the engine to start, and after so doing "she" runs all right. Aside from the matter of difficult starting, I have no fault to find.

W. H. AHRENS.

City Island, N. Y.

It might be said that there are three sources of trouble of this sort, that is, on a cold morning. These are: carburetor not properly adjusted; ignition "out of kilter"; and natural inability of gasoline to vaporize in very cold weather without supplying heat to it from an external source. The first and second may be fixed and that, too, comparatively easily, but the third cannot be changed as long as gasoline is utilized as a fuel.

As for the first, carburetor out of adjustment, there are two things to consider. Does the carburetor give sufficient fuel for starting purposes, and is the air supply reduced to a minimum for this same purpose, both being irrespective of the amount supplied upon other occasions? You should know that for starting easy, the fuel should stand in a small puddle, so that the small amount of suction created as the pistons are pulled down at the slow speeds possible with manual rotation will be sufficient to pick up a lot of fuel, forming a combustible gas. If the fuel does stand in such a puddle; that is, if there is an excess of fuel at starting time, look into the matter of air supply. For starting purposes a very small amount of additional air is needed; in fact, practically none. So, to start the engine successfully, the auxiliary air supply should be shut off entirely and the main air supply reduced to a minimum. This will result in the overrich mixture necessary being sucked up into the cylinders.

If the air be allowed to enter as in ordinary running conditions, this additional amount of air will serve to render the mixture thin and weak, so that the feeble spark obtained at the speed of rotation will not be sufficient to ignite it. The ordinary magneto gives a spark of strength or igniting qualities in proportion to the speed of rotation of the armature, the ordinary speed under working conditions being somewhere between 400 and 2,000 revolutions per minute. The best possible speed of rotation by hand is not over 45 to 50 revolutions, so that the armature rotates very slowly. Consequently, it generates a weak spark. It is then apparent that the spark not being all that it should be for instantaneous and perfect combustion, the mixture must be just about exact in order to have an explosion. If you have no explosion, the engine does not start.

Just as a suggestion, try the effect upon the starting qualities of lowering the level of the gasoline nozzle within the carburetor. Open the carburetor and screw the nozzle down about one full turn. The effect of

this will be to raise the level of the gasoline correspondingly. The fuel will then feed to the engine more readily, and you will doubtless find starting easier. You will also have to look out for flooding at other times, as the change in the fuel level tends to feed more fuel at all times. Doubtless you will have to change the level several times to get the best result.

This question has been discussed in the columns of THE AUTOMOBILE several times before, and several of the discussions were illustrated. In referring to these discussions, you may find the illustrations helpful in understanding the trouble and its remedy. You will find the subject of the effect of altering the fuel level discussed in the May 13 issue in answer to letter 1,876; June 17, letter 1,910; July 15, letter 1,940; July 22, letter 1,592; "How to Fix Carburetor," page 485, September 16 issue; "Engine Hard to Start," page 522, September 23 issue. The illustration is in the June 17 issue.

USE OF CLINCHER LUGS

Editor THE AUTOMOBILE:

[2,060]—Being much interested in and deriving much benefit from the discussion of current topics in the columns of "Letters Interesting, Answered and Discussed," I would like to ask what real use are the lugs or retaining bolts where clincher tires are used? I have a model F equipped with clincher tires and lugs. I have removed the lugs, plugged the holes in the rims, and find no bad effect therefrom. The tires can not creep under any condition if inflated, so I see no use for the lugs, except to pinch the inner tubes and make about nine-tenths of the trouble when you apply or remove a tire. I would like to know wherein it is unsafe or unwise to eliminate them.

Rodman, N. Y.

H. F. RICE.

If there was no use for these and they were as superfluous as you would like to make it appear, the tire companies would not put them on, for they cost money and so does their application. No company would voluntarily put out something which cost real money and was actually useless. It seems that the whole argument lies within your statement "The tires cannot creep under any condition if inflated * * *"

The italics are ours, used to bring out the point that the tires are not always properly inflated, so that the holding power, whatever it may be with a fully inflated tire, is not always perfect, and it is advisable to have the lugs for protection in the unusual cases. More than this, these tires do come off when well inflated, as was proven last Fall when a picture of a racing car throwing a tire of this kind was given wide publicity. The tire then was fully inflated, so that the pressure could not have worked in that case. If not in that, why in others?



HILL CLIMBING STUNT

Editor THE AUTOMOBILE:

[2,061]—Will you please inform me if it is injurious to my motor (45 horsepower) when climbing a hill on the high gear, and the motor lags a little, just at the top, to slip the clutch a little. The latter is of the multiple disc variety. In "Motor Age," a couple of weeks ago, it stated that this was a trick which every expert driver knew and practiced. I have tried it several times and found that the motor will pick up immediately, and the car finish the hill without slightest difficulty. Of course, this is only if one is just at the top, as otherwise I should think the proper thing would be to change to a lower speed at once. But I was told last week that it is very bad for my motor to slip the clutch as I have said. As it was advocated in an automobile magazine, I will be greatly obliged if you will let me know your opinion.

Babylon, L. I.

A SUBSCRIBER.

No reason appears why this practice in the hands of a skillful driver should injure the motor. The idea of the people who advised you to the contrary was doubtless founded upon the following supposition: The motor, when laboring very hard, that is, working, not laboring in the sense of pounding, if the clutch were suddenly thrown out, would speed up to a very high speed, the load under which it had been working so hard having been removed. Then, having attained a high speed, running free of a load, the same very heavy load is thrown back on it, tending to check it as suddenly as it was freed. It might be thought injurious to free the motor so suddenly and let it run so very fast. Also, it might be thought injurious to throw the load on very suddenly after it had attained speed. Both of these contentions, however true they might appear, fall flat when the amendment is made that the process be controlled by a driver of experience, who certainly never would take out the clutch suddenly or drop it in suddenly in a case of this sort.

The process of resting the motor near the top of a steep hill when ascending on the high gear, then should be practised only by an experienced driver, who will know how to release the clutch gently and let it back in after a very small interval of time not over a part of a minute, without a jerk, but slowly and gradually, so as to get the whole advantage of the increased speed of the motor, rather than drop it back in so as to be a dampening effort on the speed.

As you say in the last part of your letter, it should be used only at the very crest of a hill, and should not be resorted to as an excuse not to change gears, when the latter was really necessary. Anywhere below 40 or 50 feet from the top of the hill, the driver should drop down into a lower gear, and not overload the engine.

ANSWERED AND DISCUSSED



MATERIAL FOR GEARS

Editor THE AUTOMOBILE:

[2,062]—I have a four-cylinder car of well-known make, which runs very well, with the exception that the timing gears are very noisy and clatter all of the time. In the early Summer the car was fitted with new gears as follows: Main shaft, bronze; cam gear, steel; idler, fiber; pump and magneto (one gear) bronze. These ran very well, and made no noise, until about a month ago, when the fiber gear swelled and then stripped. The engine was then fitted up with new gears all around thus: Main shaft, bronze; camshaft, steel; idler, steel; pump and magneto, bronze.

Within a very short time, these gears, which by the way did not fit perfectly when new, as there seemed to be considerable play between all of the gears, became very noisy, although they had been well oiled. Now, the noise seems to be getting worse.

Now I would like your opinion of the best gears to put in when I replace these, and what the general practice is among the oldest builders of cars. Which combination of gears will run the longest, and which will run with the least noise; all gears of steel; steel and bronze; or a steel or bronze combination with fiber? In other words, of what material would you make each gear of to have the most silent and durable timing gears. The main gear works the idler, and the idler, the cam gear and the pump-magneto gear. Has the fiber gear been perfected so that it is perfectly safe?

Port Jervis, N. Y.

F. T.

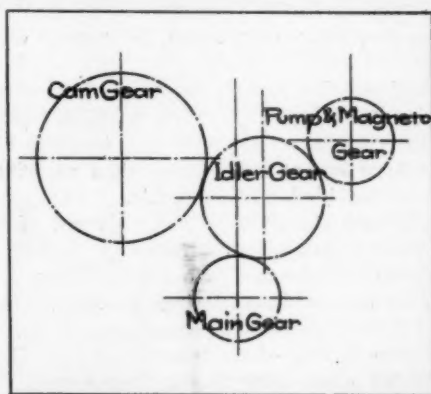
Judging from the arrangement of the gears, as shown in the sketch, it would seem as if some noise-preventing gear for the idler would serve well. The other gears could then be of any desired material, as the material should have no influence upon the noise. The mistake that was made, from the point of view of silence, was in replacing the fiber gear with a steel gear. This was the only change of material, and it was a fatal one from your point of view, as it produced just what you wished to prevent. A number of makers use rawhide as well as fiber. Either one of these has much to commend it, but you should not expect too much strength and too good wearing qualities from this kind of material. You should be content to have a quiet engine, even if you replace a gear now and then.

Just as a pump shaft is often arranged with a cotter pin, which shears off in time of trouble, saving the expensive pump, so your gears might include one which would wear out quicker than the others, but while there and working would render the whole set of gears quiet. Give the fiber gear another trial.

Many of the oldest makers are now turning to the specially-cut gears for quiet action. Thus, one of the oldest uses a herringbone face made up of a pair of helical gears set side by side, but with the helices pointing in opposite directions. This is an unusually quiet form, as is also the spiral gear, the worm gear, and other forms. To have a set of these specially cut for your car would be somewhat ex-

pensive, but would be quiet and durable as well.

Since you do not go into detail about the gears themselves, we cannot say exactly, but your statement about the play between the gears sounds funny. There is intended to be play between adjacent gears, and if you thought that they should fit up tight, you were mistaken. In cutting, the gears are so made as to have a small amount of play to and from one another. It may be that you mean that they were set too far apart, and that this clearance was materi-



Arrangement of F. T.'s Gears

ally increased so as to be very noticeable. If this was so, you were right, and the gears did not fit perfectly.

Fiber gears are now so well made as to give satisfactory service when properly used and the manufacturer's directions followed. For one thing, rawhide gears do not run well in oil, and the makers advise against its use when using that form. Makers of fiber gears may also advise against its use.

WIDELY VARYING TREADS

Editor THE AUTOMOBILE:

[2,063]—Why is it that some manufacturers make cars with 55, some with 56, some with 56 1-2, and still others with 60-inch treads? What is the reason for this variation?

J. H. TYLER.

Buffalo, N. Y.

Standard railroad tread is 4 feet 8 1-2 inches, that is, 56 1-2 inches. The existing differences represent the result of neglecting the odd half inch, or of a misunderstanding of the exact figure. The extreme difference as shown by the 60-inch figure represents the cars built for Southern roads, where the wide tread is in favor, and replaces the ordinary railroad gauge used elsewhere. Cars built especially for Southern roads have that tread.

PROPER VALVE SETTING

Editor THE AUTOMOBILE:

[2,064]—I have a four-cylinder runabout, four-cycle, size 3 3/4 bore, 3 1/2 stroke, which has got out of square, I presume through wear and lost motion in the valve operating mechanism. That is, "she" does not beat square in the exhaust, as we say in speaking of a locomotive.

Valves are placed opposite each other in the head. The cams are made solid on cam shafts, and valves are operated by long rocker arms that have a screw adjustment on the end next valve stem, as shown in the enclosed cut.

Will you please inform me how to adjust valve opening relative to position of piston stroke to get best results as to power and speed?

Don't give any algebraic formulae; just state in plain fractions of an inch how far off dead centers inlet and exhaust valves should begin to open.

North Adams, Mass.

NOVICE.

Not knowing the length of the connecting rod of the engine in question, we cannot give you the distance you wish exactly. Similarly, the cams were constructed for some certain valve setting, and should we give you a different one, the engine would not run well. You should write to the manufacturers of your car and ask them what valve setting they intended the engine to have. Knowing that, we could compute or lay out the exact distance the piston would be from each end when the various valve actions commenced or ceased. As it is, what we can give you will be approximate, and, as said before, the engine may not run well with this setting.

Set your inlet valve so as to start to open when the piston is 3-64 inch below upper dead center, that is, when it has turned so far that the piston has gone down that amount. Similarly, for the exhaust valve set that so as to commence to open when the piston lacks from 5-32 to 3-16 inch of reaching the lower center, that is, that much before the lower center is reached. If you cannot measure into 64ths, 3-16 inch will be close enough for you to find out if the inlet setting recommended is right enough to use with your engine.

The settings given above correspond as nearly as we can lay it out (guessing at the length of the connecting rod) to a lag of the inlet valve amounting to 10 degrees on the crank circle. The exhaust setting corresponds to a setting of 30 degrees before the lower center.

Current practice in valve settings varies from one factory to another, and you may find that with your cams, the inlet opening as given makes the inlet closing come too late. So, too, with the exhaust opening, you may find that your cams in combination with this setting, make the exhaust closing come too early.

Any angle of inlet opening less than the one given (10 deg.) would decrease the distance given, and any greater angle would increase it. With the exhaust, a smaller angle would lessen the distance given, while a larger one would increase it. We state this because you may set according to the above figures first, and write to the manufacturers later. In that case, you would have a means of comparison.

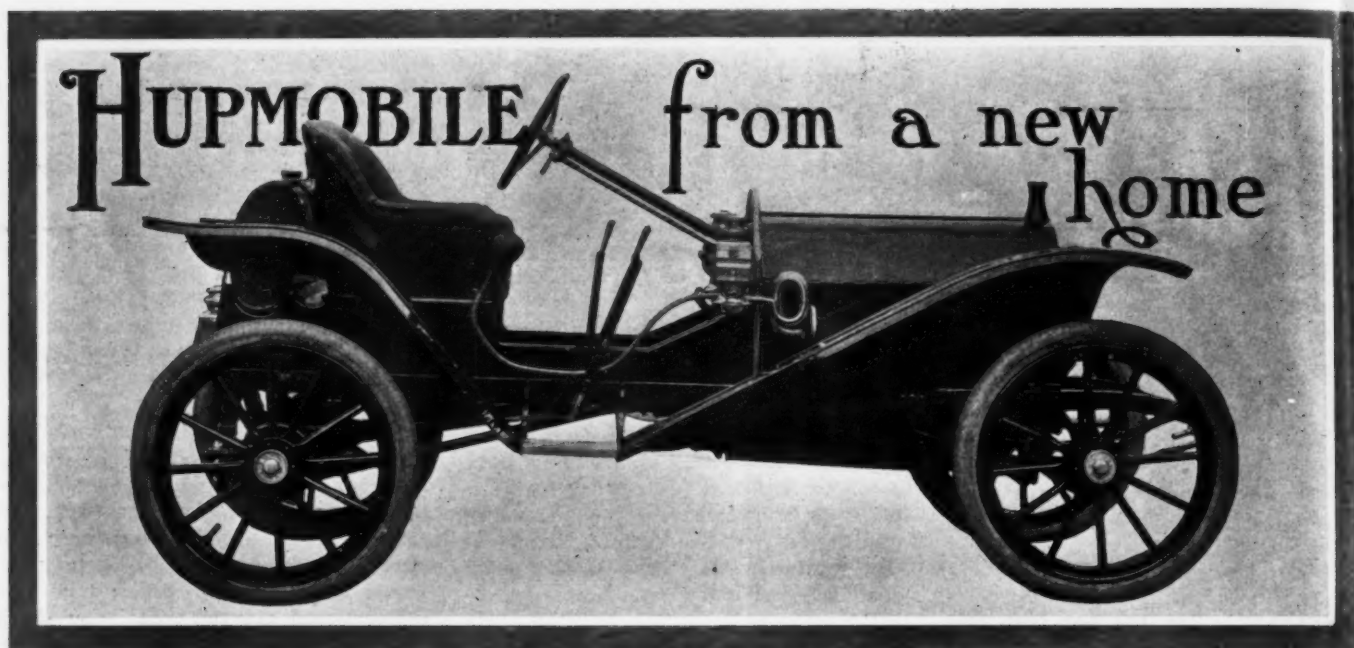


Fig. 1—Car as seen from the right side, showing a low seat, much tilted wheel, and fuel tank to the rear

LAST YEAR the number of cars produced of this make reached the comfortable figure of 500 despite the lack of facilities such as are now at the disposal of the company. The new plant, with a floor space approximating 50,000 square feet of concrete block construction, is a model of its kind, and Model B, which is the car for 1910, is being turned out under the most favorable conditions at the rate of thirty a day. The title illustration is a fair view of the car, presenting the earmarks of elegance, utility and evidences of a certain sturdiness which is borne out by performance in service.

The general design is such that the appearance is that of a racing machine, and since this is direct evidence of a low center of gravity and all that it implies, it will come as no surprise to learn that the road performance is praiseworthy in the extreme. With the seat located at about the point of least motion of the body and low, the sensation of ease and comfort is experienced, which is accentuated by the well-regulated distance from the front of the seat to the dash.

Four-Cylinder Motor Is a Feature—With a bore of 3 3/4 and stroke of 3 3/8 inches, the four-cylinder motor used is rated at 20 horsepower, and considering the light weight of the complete car, mode of suspension and other favorable considerations, the power situation lends confidence. The power plant is self-contained, and suspended in such a way that the chassis frame deformations, due to road inequalities, are not transmitted to the machinery.

The flywheel, 14 inches in diameter, weighs 40 pounds, is provided with helical blades to propel air to the radiator and is placed in front. The starting crank is journaled in a cast extension which is fastened to the front cross member of the chassis frame and is held out of engagement by a helical spring. The crankshaft, of special (heat-treated) steel,

is designed to afford great initial rigidity, and the connecting rods, of H-section steel (drop forged) engage the crankshaft through bearings of Parsons' white bronze of liberal projected area, thus assuring long service in the absence of bearing trouble.

The pistons, of a special grade of cast gray iron, are taper ground, 3 5/8 inches long, with an oil groove 7/8 inches wide to oil the wrist pin, and three eccentric, bevel, split, packing rings prevent the leakage of compression. The rings are machined to near size and ground on three faces. The valves are 1 1/2 inches in diameter, made of nickel steel and finished with a 45-degree seat. All valves are located on the left side of the motor and spark plugs are located over the inlet valves.

Camshaft Placed for Quick Inspection—Referring to Fig. 4 of the camshaft, it is provided with five bearings in a separate demountable member of the crank case and the removal of ten nuts allows of removing the member, including the camshaft, gear and tappets. The shaft of the type with integral cams is babbitted in, which is a new idea in automobile work, and the gear, of the silent type, is exposed to view and may be gotten at. The magneto is bolted to a shelf which extends out from the same member and the same scheme of bolting renders it feasible to demount the magneto and its driving mechanism without disturbing any other part of the motor. The half-time pinion on the crankshaft is of steel and the thickness of the gasket between the cover and the case may be varied to alter adjustment of the meshing gears.

Bosch Magneto Provided for Ignition Work—The Bosch magneto is of the high-tension type with fixed ignition, and the wiring system, which is neatly and securely installed, comprises five leads, four lead to the respective spark plugs and the remaining lead con-

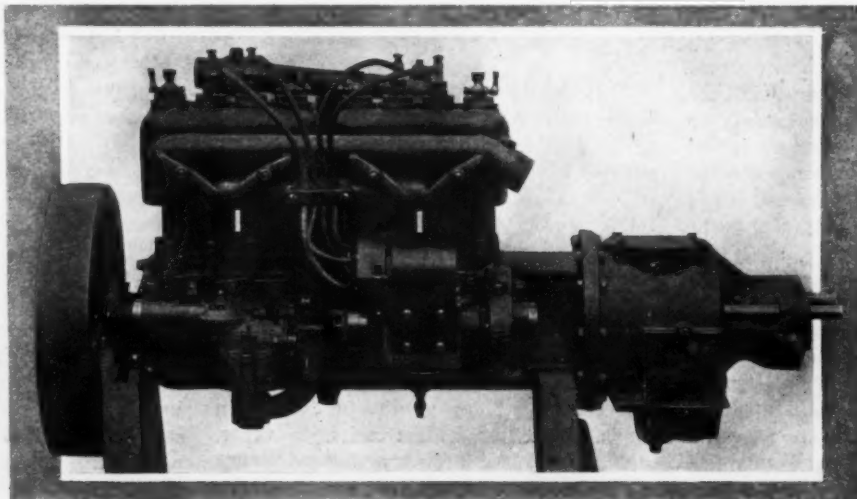


Fig. 2—Left side of the motor, showing magneto, fan in the flywheel, sliding gear system, Breeze carburetor, and unit construction

nects with a switch on the dash; the switch short-circuits the magneto for purposes of cutting out the ignition.

Oiling System Has Special Features—As Fig. 3 shows, the oiler is placed on the exhaust side of the motor and the heat of the exhaust keeps the oil at a constant viscosity. The oil is piped to the crankcase by visible piping and the system of oiling is by splash. Oil pockets are provided over all bearings and the lubricant, when it splashes, falls into the pockets and runs down through proper channels to the respective bearings. The rate of flow of the lubricating oil is controlled by a suitable adjustable valve, easy of access, and by means of a lever system the flow of the oil is increased with the speed of the motor.

Multiple Disc Clutch and Sliding Gear—From Figs. 2 and 3 of the extension of the crankcase for the transmission gear, including the clutch, to Fig. 4 of the same members separated, leads to a better understanding of the nice details inclosed. The multiple disc clutch is of liberal proportions, having nine discs, designed for easy but positive engagement and the two-speed (and reverse) sliding gear is something of an innovation in automobile work. The low speed is designed with a gear ratio of 2.7:1 and the high speed is "direct."

The control is with a suitably contrived side lever of artistic appearance and the system is "selective." The gears are of 20 carbon steel, bone-hardened and drawn in oil after machining and accurately generating the gears, which are ten pitch.

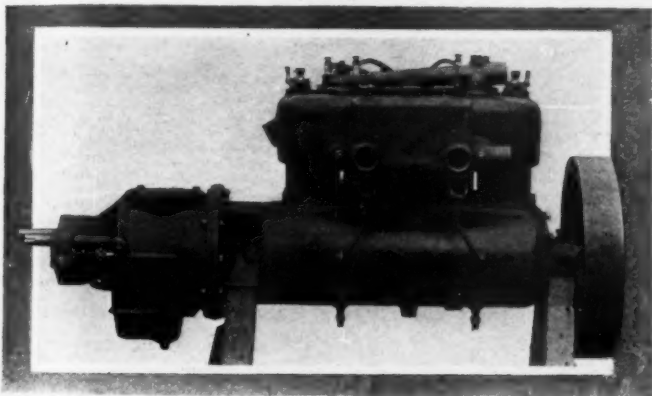


Fig. 3—Right side of the motor, showing flywheel in front, and lubricating oil tank which is warmed by exhaust heat

The faces of gears are 5-8 and 11-16 inches, respectively, and layshaft gears are riveted to a bronze hub that journals on a hardened and ground shaft.

Front Axle Represents a New Departure—In the latest car the front axle is of the I-section, drop forged from 40 carbon steel, and the yokes are forged integral. This is considered a big advance over the former practice on Model A, which was a built-up tubular type. In the new axle one of the noteworthy points is in the use of large steering arms, 13-16 inches in diameter, mounted with adjustable ball bearings of large diameter.

Some Prominent Chassis Features—The rear spring suspension is one of the most prominent features, and in view of its fine performance in the last year's cars, it is continued in Model B with a good showing of confidence. This spring is designated as an inverted double sweep type, has a ball socket clipped in the middle, taking a ball-ended taper shank bolt that seats in a bracket in the middle of the rear cross member of the frame, giving the frame a three-point suspension.

The eyes of the spring are pivoted to sliding journals having a bearing on a cross-bar parallel with and to the rear of the axle, and arms extend out from the brake supports to support the mechanism. This construction allows of suspending the chassis frame considerably lower than usual, and the fine appearance of the car is almost wholly due to this method of spring suspension, including semielliptic front springs.

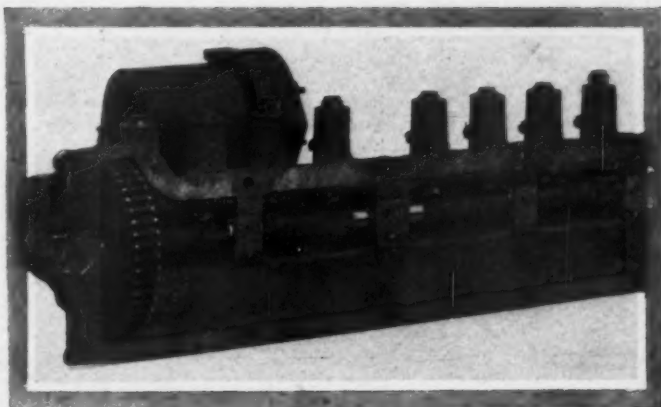


Fig. 4—Camshaft, indicating how it is placed in a separable part of the case and can be removed, with its gear, at will

There are four internal expanding brakes, faced with asbestos fabric, which is rendered strong by interwoven copper wire. This double set of brakes, with two sets of shoes in each wheel drum (side by side) being cam actuated, considering a straight-line system of linkages and rods, assures a safe and permanent braking system. The brakes are manipulated by side lever and foot pedal, respectively.

Steering Gear Is Nicely Worked Out—The steering gear is of the inclosed rack-and-pinion type, both members bone-hardened and ground accurately to size, and sustained straight-line connections assure entire freedom from bending moments. The housing of the gear is riveted to the front cross member and holds a liberal bearing for the shaft, which is inclosed and tilts back at a convenient angle from the point of view of appearance and utility. The steering wheel is of standard diameter, has a spider of aluminum and the spark and throttle system is above the wheel.

Additional Important Considerations—The wheelbase is 86 inches with a standard tread, and 30x3-inch G & J tires are used. The road clearance at the lowest point is 11 inches and 13 inches clearance under the flywheel assures safety. The color of the body is "Hupmobile Red" with black moulding and hair striping. The upholstery is of a substantial character with plain black machine buffed leather, padded to support the back without interfering with easy motion of the shoulders.

The oval gasoline, placed at the rear of the seat, is a 1910 innovation which adds materially to the general appearance of the car, and it has the further advantage of rendering the fuel system easy of access. The tank has a capacity of 11 gallons and is high enough up to allow of a gravity feed. The whole car weighs 1,100 pounds, and it is claimed by the makers that it will reach a speed of 50 miles per hour. The price, including oil lamps, tools, with full equipment for the road (with magneto) is \$750, a reasonable figure for the average buyer.

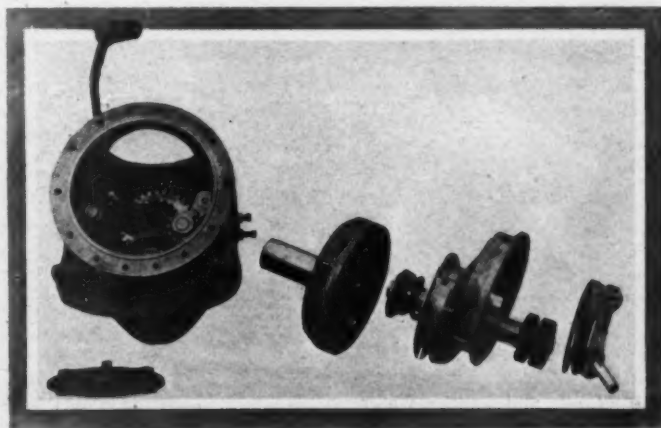


Fig. 5—Two-speed sliding gear, multiple disc clutch, and relating parts, with housing and details



Fig. 1—Three-ton chassis showing power plant in front, radiator above, and fuel tank which comes under driver's seat.

"WE guarantee service" is printed on the cover of the catalogue issued by the Grabowsky Power Wagon Company, of Detroit, Mich., and the title illustration of this article depicts the chassis which is responsible for the results attained. While the makers have a line of commercials to place at the disposal of users, the fact remains that the 3-ton power wagon, as shown in the chassis, as well as in the service of a brewery, as offered in Fig. 2, is the leader of the line, and the many nice features which will be uncovered by a close inspection, are well worth enumerating.

Demountable Power Plant a Conspicuous Feature—All models of this make are so contrived that the power plant may be removed or replaced in less than ten minutes. In this way it is possible to run a number of these cars in service, and by having one extra power plant, a repair can be made without laying up the wagon. The double opposed motor and all its accessories are located as a unit, at the front end of the chassis frame, and the radiator is placed at a point back of the power plant, but in front of the driver's seat.

Obviously, it is an advantage to have the power plant open to easy access, rather than under the driver's seat, and with the radiator placed above the motor, the thermo-syphon system of cooling may be employed to the greatest advantage. In a sense there is nothing new about this advanced method of nesting the machinery, so far as Grabowsky practice is concerned, but there are little refinements to be noted, as for illustration, by means of a register, the heated air, from the radiator, is guided into the cab of the car, and the driver is kept warm thereby. If the weather is not inclement, the register may be closed and the heat is deflected so that the cab will not be too warm.

The thermo-syphon radiator, instead of having the filler on top, has it at a point about one-third down, from the top, at one side. In consequence of this, the remaining upper third of the radiator has no water in it at all, and as the water bursts into steam, the latter rises to the top, and then condenses. The steam cannot

ooze out and become a nuisance as well as a source of loss of water, because it is entrapped, and owing to the high temperature (that of steam at the atmospheric pressure) the efficiency of heat transfer is very high, and in this way the good results experienced are accounted for.

Sturdy Vigorous Motor Practice—The double opposed, water cooled, 40-45 horse power motor, with 6 x 5-inch bore and stroke respectively, of cylinders, is designed especially for truck service, has a relatively heavy flywheel to assure that the motor will not stall under severe conditions of service, and the oiling system is absolutely automatic, brought about through the use of a pump driven from the camshaft. In the design of the crankcase, a chamber is provided for the excess lubricating oil, and it is the duty of the pump to force oil in to all of the bearings; excesses drain back to the chamber.

The camshaft is of special steel, with hardened integral cams, and it is so placed that it is readily removed and replaced, besides facilitating the straight line motion which is necessary if good timing is to be counted upon. The half-time gears are pressed on and properly keyed, are of liberal proportions, do the work without making noise, and the bearings, not only for the camshaft, but the crankshaft, are of a fine grade of white metal, of liberal length, and fitted by hand scraping.

The timer is placed on the end of the camshaft where it extends out from the case, and in view of the location of the motor in the chassis, the timer is accessible. The main bearings of the motor may be removed at will and the method of assembling is such that a mistake on the part of a new man at the task is quite out of the question. The valves are large, reciprocate in long guides, and a suitable adjustment is provided at the tappet ends to enable the timing to be done with great precision.

Besides all the care exercised to assure that the motor will give absolutely no trouble on the road, provision is made for quick work, if for any reason trouble should be experienced. In order that an inspection can be made in short order, a cover is placed



Fig. 2—Three-ton power wagon in brewery service, with open cab, steel wheels, dual rear tires, and a full load

on the top of the case, and it is large enough to uncover the camshaft and other working parts. Besides this, at the expense of removal of four nuts, it is possible to remove the camshaft from its position and then the crankshaft will be so exposed that the bearings will be accessible and may be adjusted if necessary; a point not always so carefully provided for.

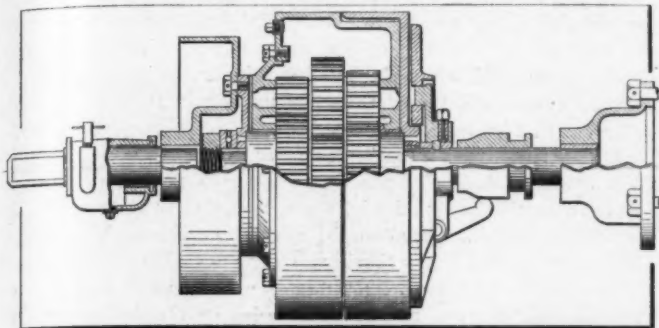


Fig. 3—Planetary transmission, opened up to show integral planets in a grease tight case and other nice design features

Planetary Transmission of Great Value—The planetary gear system is a part of the self-contained power plant, and by removing the plant the transmission comes out with it and may be overhauled at the same time. The planetary gear, as shown in Fig. 3, has a pinion on an extension of the crankshaft and planetary gears revolving around the same. The planets are duplicated to assure a correct balance, and the three gears of each set are cut integral, on Fellow's shapers, using special steel. The gear gives two forward speeds and reverse, and the clutches are so liberally designed that the driver may not destroy the facings even if slipping is tolerated. The gears are so nicely cut and fitted into the case that noise is eliminated, and when the case is properly filled with lubricant wear is rated below a remote contingency. The thrust of the clutch, which is

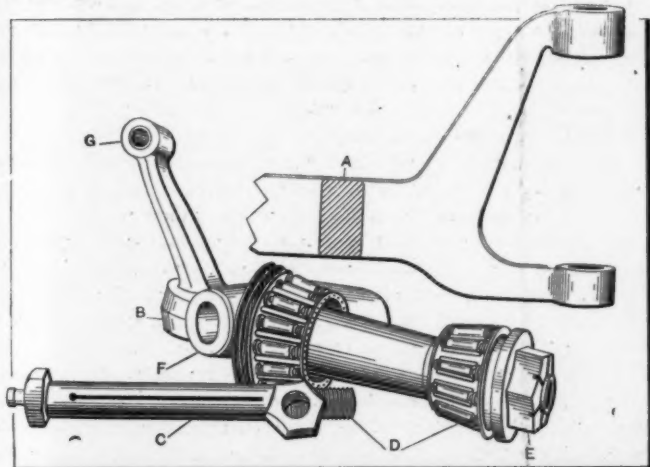


Fig. 5—Knuckle end of front axle, knuckle, bearings and knuckle pin of special steel

but slight, is taken up by a suitable ball bearing, and due to the use of liberal bearings throughout, coupled with fine workmanship, the transmission system is capable of performing its important functions, even in the hands of men of no skill, without showing depreciation worthy of notice.

Chassis Features of Noteworthy Purport—Steel wheels are used in all cases unless the purchaser elects to the contrary. Fig. 4 depicts a section of one of the steel wheels, and besides great strength, this type of wheel is proving to possess peculiarly advantageous properties, according to the Grabowsky experiences, among which resilience is mentioned. The construction of the steel wheels is such that lateral efforts are adequately cared for by using two discs of steel dished in and out, and they, in turn, clinch a ring of wood which is clamped between the hub

flanges. Additional strength is imparted to the wheels by virtue of spoke-shaped contouring, which is done in dies, and this shaping also has the advantage of giving to the wheels the general appearance of spoked wheels.

The solid rubber tires are clinched in place in the usual manner, with tires in front, and dual tires in the rear, thus affording adequate tire capacity and reducing the cost of tires per ton mile to a minimum in expense accounts.

Side-Chain Drive with Special Features—The large sprocket wheel which is an integral part of the rear wheel hub, on each side, accommodates sprocket chains of liberal size, and passes around sprocket pinions placed on the jackshafts which extend out on each side of the unit system for the differential and bevel gear set. This unit system of housing for the bevel drive and differential is not unlike a live rear axle excepting that it is placed under and suspended from the chassis frame at a point in front of the rear axle. The advantage of this system over the conventional method lies in the ease with which the whole unit may be removed if the occasion requires, and strains are kept from distorting the chassis frame and destroying alignment of the rotative members.

Steering Methods Show Strength—The front, as well as the hind axle, is of the rectangular section, sufficiently large to assure a wide margin of safety, and the knuckles, which are die forgings of special steel, are designed to accommodate the steering road wheels with Timken roller bearings, as shown in Fig. 5. A represents the axle, B is the knuckle, C is the knuckle-pin, D the taper roller bearings, and E the castellated lock-nut which holds the wheel on. The bushings F and G are a fine grade of phosphor bronze, and purposely made thin enough to abort deformation, which would follow were they very thick of walls. The knuckle-pin, made of a special grade of steel, heat treated, is grooved to facilitate the flow of oil, and in view of the method of heat treating the knuckle, as well as the pin, it is believed that the system embodies a wide measure of safety as well as

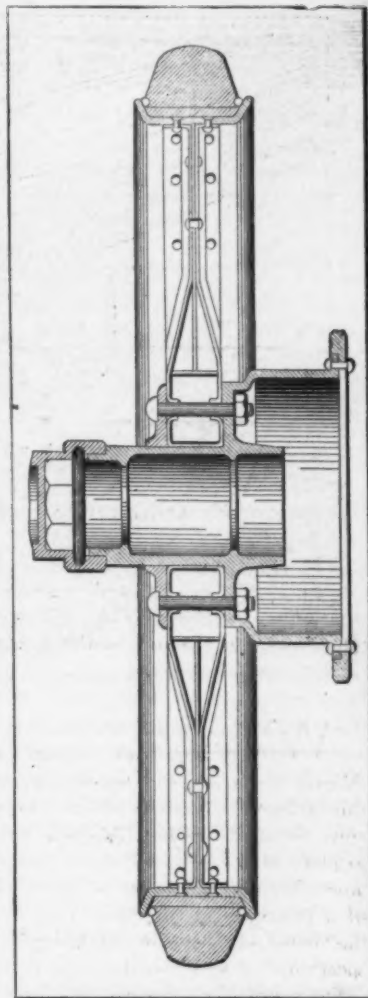


Fig. 4—Section of a steel wheel showing wood rings to which the discs are clinched and reinforcing methods.

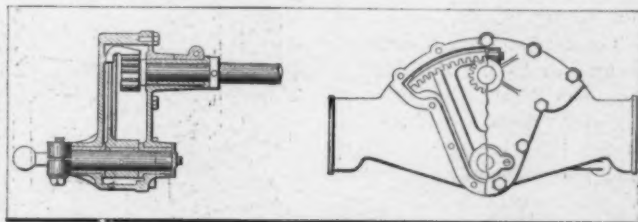


Fig. 6—Steering gear, opened up to show pinion and sector, liberal bearings and grease tight housing

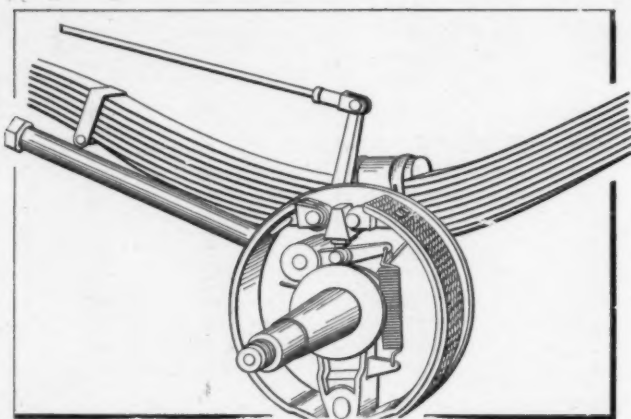


Fig. 7—End of rear axle with wheel removed, showing brake-drum, band, facing, and toggle system

behaving nicely under severe road conditions when the trucks are heavily loaded.

The steering gear proper is of the pinion and sector type, as shown in Fig. 6, sectioned at *A* and cut away at *B* to show how the pinion meshes with the sector. The sector is of large diameter, and the pinion has the minimum number of teeth safety considered, so that the ratio of reduction is in full accord with the best practice. The pinion is cut integral with its shaft so that strength is in no way depending upon a key or other insecure means of fastening the same to its shaft. The whole system is properly housed, runs in grease, and is easy to get at owing to covers being placed where they will do the most good. The steering arm is of special steel, heat treated, and the ball *a*, shown in the section *A*, is of large diameter, hardened, and fits in a socket, with means of take-up, to be utilized as the occasion requires.

Brakes of Durable Design—To properly cope with this problem it was deemed expedient to provide three sets of brakes, two of which are in the rear wheels, of the internal expanding order, as shown in Fig. 7, cut away to disclose one set of faced shoes, which are $2\frac{1}{2}$ inches wide. The emergency brake, 10 inches in diameter and $2\frac{1}{2}$ inches wide, is located on the engine shaft next to the transmission. The propeller shaft is of good diameter, runs in a straight line in all planes, yet even so, a universal joint is provided in order to care for frame deflections, which must be taken into account.

With a surfeit of power which is a Grabowsky claim, and the over-loading which cannot be governed, it is necessary to allow for deflections, provide a superabundance of brakes and have all the members so strong that they will not fail in an emergency. These points are rarely ever taken into account in a theoretical discussion of the subject, and in all probability experience only will lead to assured results. The chassis frame is of the channel section, $4\frac{1}{8} \times 2\frac{3}{4} \times \frac{1}{4}$ inches, of special steel, so braced laterally as to render the structure capable.

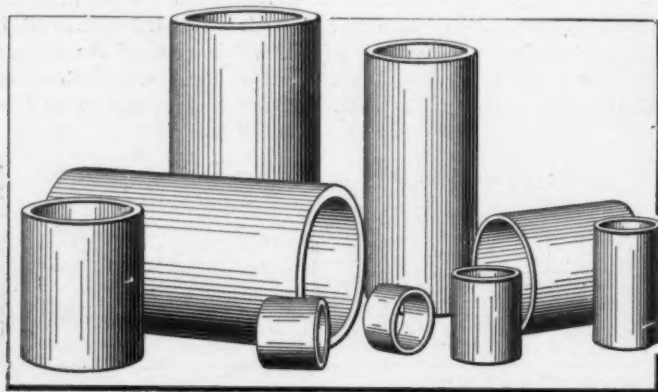


Fig. 8—Bushings used at every point, made interchangeable in order that repairs will be cheap and quickly made

Three-quarter platform springs at the rear are fastened to the rear cross member by a strong steel casting, and hot riveting at every point has the advantage of clamping the riveted members into close relation, due to the care with which the riveting is done and the shrinking which takes place when the rivets cool off. The rivet stock is of a character which will not deteriorate when it is heated, and the pneumatic riveters do the work so nicely that good results are a normal expectation. The front springs are of the half-elliptic type, wide, of a fine grade of spring steel, and while the number of plates change under the several conditions, yet even so, the loading in front is so nearly constant that half-elliptic springs for the front are satisfactory.

One Prime Idea Dominates Everything—The most important detail of design of the Grabowsky power wagons has been retained to the last, and Fig. 8 portrays, better than words, the system of bushings used in the several bearings. They are so fashioned that, should a bushing wear out, all that is necessary is to replace the same with a new one from stock and the unit will then be as good as new. The idea of the designer is that every bearing in the wagons will be so easy to keep in order by this means that there will be no excuse for laying a wagon up even for a short while. The bushings are low in cost, require little space for keeping, and by having a set in stock every owner of a Grabowsky will be in a position to do his own repair work at small cost and with no loss of time.

Some Commercial Phases of the Grabowsky—The whole line of cars, as well as the 3-ton chassis here discussed, are uniform in design, and what is true of one is also descriptive of the remaining models. The line includes everything from a 1-ton truck or delivery wagon to the largest size for which there is any demand, and the uses to which these power wagons are put includes sight seeing, trucking, delivery service, etc.

NEW BOOKS FOR AUTOMOBILISTS

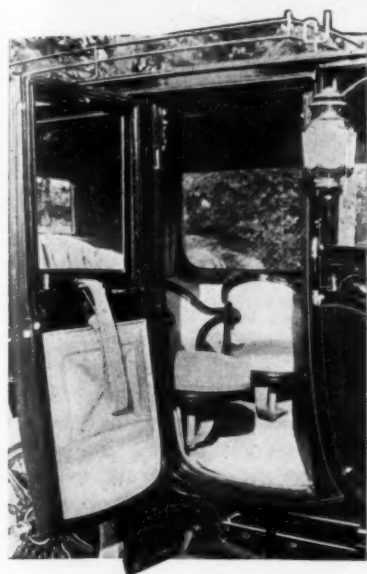
"Carburetors, Vaporizers and Distributing Valves" as used in internal combustion engines, is the title on one of the best recent additions to the library of the automobile enthusiast or engineer. In this work the author, Edward Butler, has attacked the subject with typical English thoroughness, and the result is a book that is well worth having. From the point of view of the automobile engineer it is to be regretted that so many of the excellent illustrations are drawn from stationary practice, but this can be overlooked when the unusual number and character of these same illustrations is considered, many, if not most of them, being shown in print for the first time. The only other regrettable feature of the whole twelve chapters is the author's very evident featuring of his own inventions, which, however meritorious they may be, ought not to be so exploited.

Starting with the first carburetors, the author carefully traces out the development of the up-to-date devices for fuel vaporization, not in a historical way, but from an efficiency standpoint. The extent of Chapter 12, devoted to slide valves, may fairly be taken as a measure of this, the whole twelve pages being devoted to the latest practice. This matter concludes the book and follows twelve equally excellent pages on rotary distributing valves. Since the valves and valve action is so closely allied with the fuel question, and any treatment of the latter must include proper treatment of the former, Chapters 9 and 10 will be of more than passing interest. The former is entitled "Water-Cooled Exhaust Valves," while the latter deals with "Admission Valves and Combined Valves for Large-Powered Engines." Coupled with the extended interest in two-cycle motors and their well-known fuel vaporization troubles, it is very appropriate that the chapter devoted to "Two-Cycle and Camless Engines" should be large, the third largest of the book. The 200 illustrations, aside from the complaint above, are very good, having been selected from best English, French, German, Swiss and Belgian practice. This work, from the press of J. B. Lippincott Company, Philadelphia, should be one of the "best sellers" if judged on the basis of real merit.

ELEGANT FRENCH LIMOUSINE IMPORTED BY NEW YORKER

PARISIAN ideas of luxury in automobile bodies are well illustrated in the handsome 50-60-horsepower Renault limousine imported by E. L. Giroux, a wealthy copper magnate of New York City, which was on view at the garage of Renault

Frères last week. The chassis is a standard Renault construction, carrying a six-cylinder motor of 120 by 140 millimeters bore and stroke; evidently there will be no lack of power. The wheelbase is very long, approximating 12 feet. The car embodies the usual Renault features of thermo-syphon water circulation, ignition by high-tension magneto with fixed spark advance, four-speed gear with two sliding members operated by a progressive lever, and shaft drive to the live rear axle.



Revealing Luxurious Interior

Mr. Giroux bought the car last spring and had it fitted with an open touring body. With this equipment he made an extensive tour through France, Italy and Germany. Returning to Paris on his way back to the United States, he happened to visit the plant of Kellner, the famous French body builder. There he saw a

limousine which was being made to the order of the Czar of Russia. Mr. Giroux liked the body so well that he ordered practically a duplicate to be placed on his Renault chassis.

The limousine body appears through the open door nearly the size of a small reception room. Five passengers are easily accommodated. The two forward seats in the interior, instead of the usual small and uncomfortable stools, are full-size revolving arm chairs, and the occupants can swing around to face either forward or back without disturbing their companions. The interior woodwork is mahogany and the upholstering silver-gray velours. The finish in wood has many advantages over the old method, in which that part of the interior not upholstered was covered with cloth. The wood finish is preferred by many for its appearance, but is also easier cleaned and retains longer its freshness. The interior fittings show the designing of an artist of no mean ability. The electric lights are supported on little figures of angels, richly gilded.

Most striking in their novelty are the side lamps, which, as is rapidly becoming customary with limousine bodies, are carried on the body framework back of the driver's seat at a considerable elevation. Also following the most modern practice, these lamps are electric, thus avoiding the unpleasant heat and odor inherent in oil lamps. The shape of the lamps is particularly elegant. Each has three windows of a graceful outline tapering to the bottom; these are set so as to occupy about one-half of the circumference of the lamp. The further equipment of the car includes two powerful headlights and two horns, one an electric siren and the other a four-tubed device which gives a call similar to that of a bugle. The mudguards and running boards are very wide and are supplemented by aprons extending to the frame. Although by intent a town car, the machine's great power gives it considerable ability as a tourist.



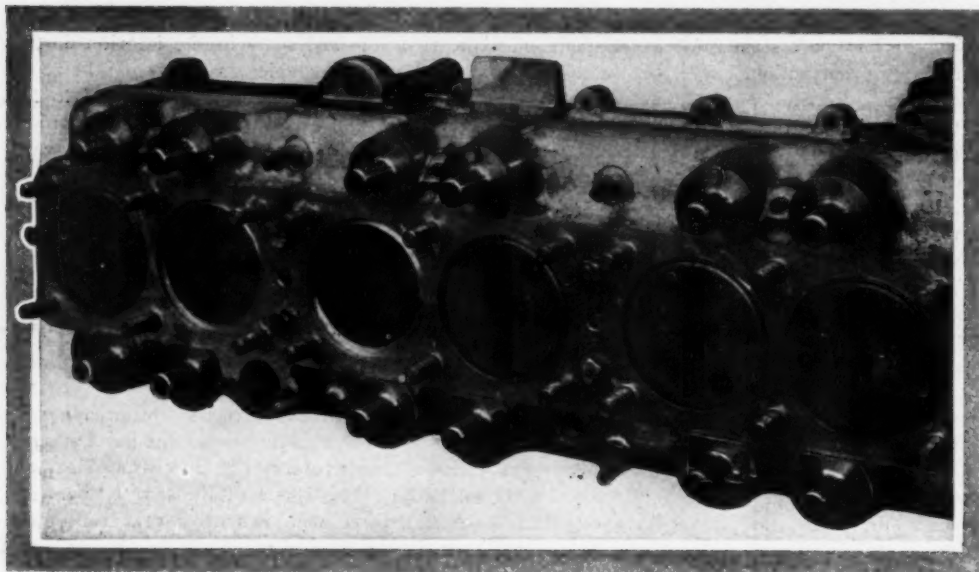
Renault Limousine Imported by Mr. Giroux Ornaments

a Drive in Central Park

LUBRICATING SYSTEMS REFINED TO AVOID TROUBLE

WHEN a little excess of lubricating oil accumulates in the crankcase of a motor it is prone to splash up and be sucked by the piston (on the suction stroke) into the combus-

falo, a few days ago, the writer noticed the way in which this possibility is prevented by the simple process of fitting slotted covers over the cylinder openings of the crankcase, the slots being for the connecting rods to play in, as will be seen at a glance.



Baffle Covers Fitted Over Crankcase Openings to Prevent Oil Splashing

tion space of the cylinders, causing ignition trouble and accumulations of carbon which will end in knocking. In passing through the plant of the Pierce-Arrow Motor Car Co., at Buf-

falo, the means for lubrication are so well applied that this extra precaution, as illustrated, comes as a safety measure rather than as a necessity.

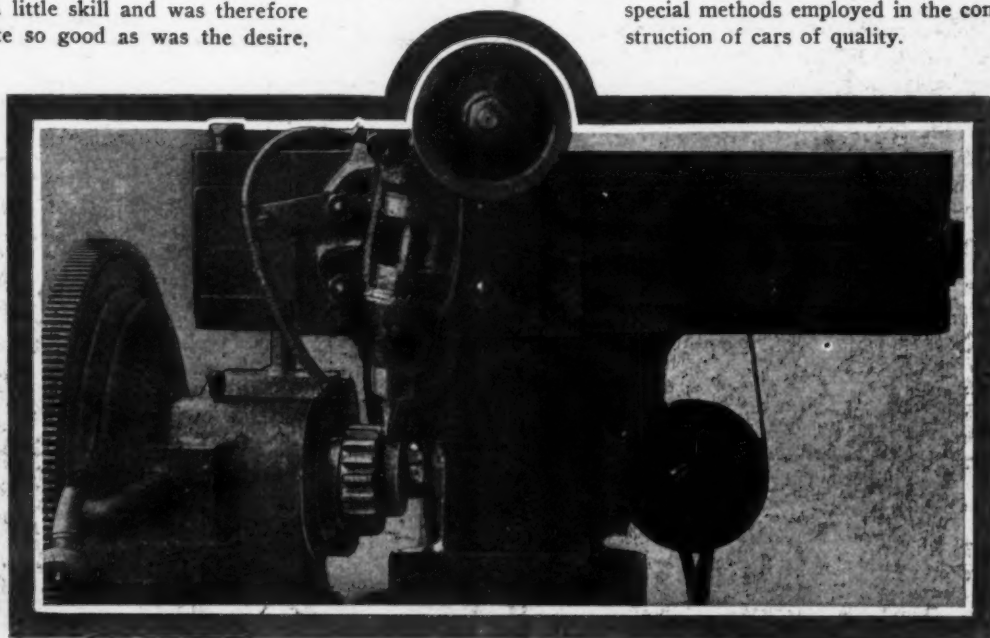
This form of baffling the excesses of lubricating oil was originally brought out in connection with double opposed motors, and is used on the Reo in order that excess of lubricating oil will not be experienced in the rear cylinder, it being the practice in Reo cars to place the motor so that the cylinders are in the fore and aft plane. The idea worked out very well indeed in this car, and it should be of good advantage in a six-cylinder motor, even if the cylinders are vertical, for, with a rather long crankcase, it is just possible that a little excess oil in the crankcase might pile up at one end when the car is negotiating a steep grade and produce lubricating trouble. True,

AUTOMATIC CHAMFERING PROCESS FOR GEARS SAVES COST

FORMERLY it was the practice to hand chamfer the teeth of sliding gears in order to provide the wedge shape which is necessary to enable them to engage readily when sliding into the respective speeds. The hand process was slow, had to be conducted by men of more than a little skill and was therefore costly. The results were not quite so good as was the desire, owing to the differences which will always be present when hand work is depended upon, it being impossible to realize exactly the same degree of accuracy from any one man on different days, to say nothing about differences which will exist between different men.

Fortunately the efforts made to reduce this process to an automatic-machine basis has succeeded and the machine now used for this purpose is here depicted, showing the gear in place on the "mandrel" and the chamfering tool just entering to make a cut. This tool belongs to the vertical milling-machine class, and for this work is provided with motions to impart to the milling cutter the ability to skirt around the end of the gear tooth, to give it a wedge shape,

and to back off, register and enter again for purposes of cutting, which it will do as many times as there are teeth in the gear. The photograph was taken at the plant of the E. R. Thomas Motor Company, at Buffalo, N. Y., and is but one of the many special methods employed in the construction of cars of quality.



Profiler Leaves More Face Than That Due to Hand Work



Bablot in a Brasier Making Fast Time in His Approach to the Foot of the Hill

GAILLON'S CLIMB HAD BABLOT FOR STAR

PARIS, Oct. 15—Bablot, driving Brasier's four-cylinder Grand Prix racer, made the fastest time in the eleventh annual Gaillon hill climb. With the car built for the late Leon Thery, and driven by him for the last time in the 1908 Grand Prix, Bablot romped up the Normandy hill in 28.2-5 seconds. This is 2.1-5 seconds slower than the same driver's time last year, and is far behind the world's record set up by Lee Guinness with the famous eight-cylinder Darracq sprinter, which climbed the hill in 25 flat, at an average speed of 89 miles an hour. The slower time is largely explained by the fact that for six hours previous to the start of the hill climb rain had fallen continuously. It had been necessary, in fact, to postpone the start from morning until noon in order to give the competitors a reasonable chance. Even this did not allow the course to dry thoroughly.

Joerns, on a German Opel car built in expectation of a 1909 Grand Prix, made the second fastest time, with a climb up the hill in 30 seconds. The car conforms with the regulations issued for the Grand Prix race announced for this year. When the race was abandoned, almost immediately after it was announced, the Opel company found themselves with three special 130 milli-

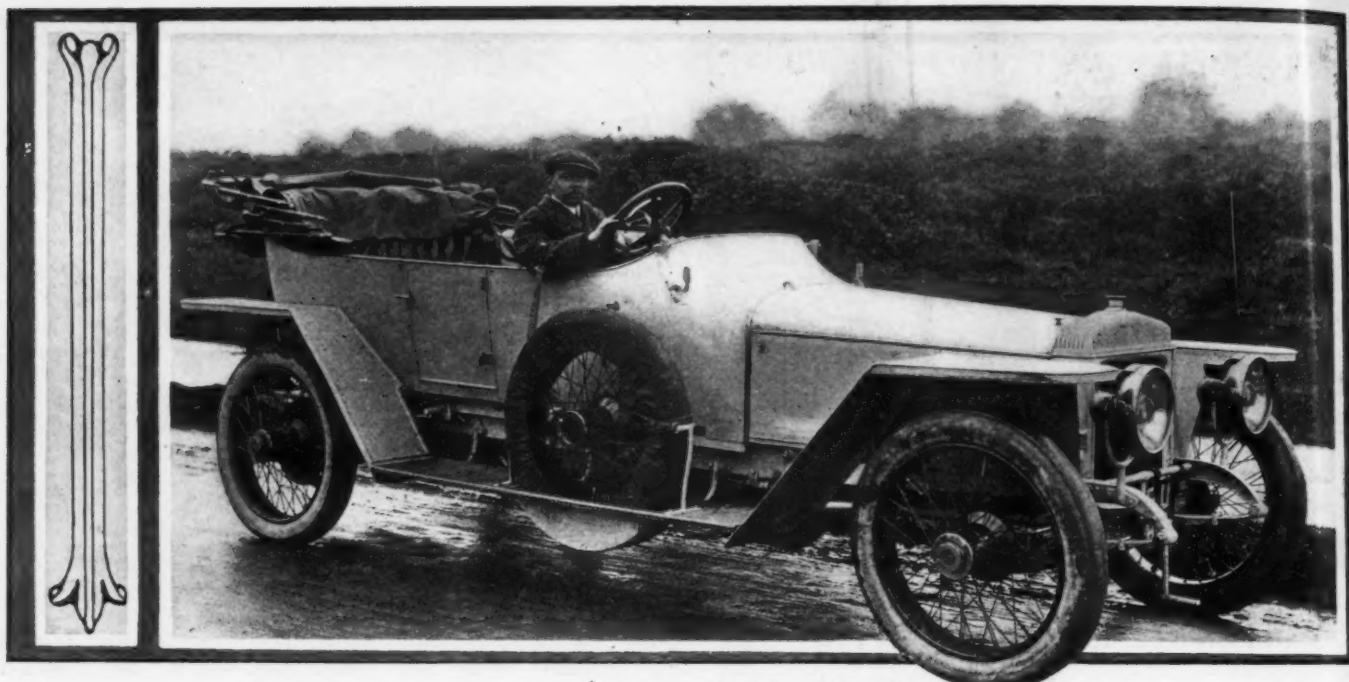
meter cars on their hands which they have only been able to use for hill climbing and demonstration events. Gaste, with a six-cylinder Rossel, put up 32 seconds.

In the racing voiturette class, for one-lungers with a bore of 3.9 inches and a stroke not exceeding 10 inches, Lion-Peugeot continued its series of victories, Giuppone getting up the hill on his high-bonneted monster in 46.1-5 seconds. A Corre-La-Licorne climbed the hill in 57 seconds, and Crespelle went up in 59.2-5 seconds. Georges Sizaire, who came forth at the eleventh hour with the intention of pitting his Sizaire-Naudin one-lunger against the eternal Lion-Peugeot rival, found that he was geared too high for hill work, and had to retire.

Page, driving a four-cylinder Motobloc, made the best performance in the touring classes. Though having a bore of only 3.1-2 by 5.1-0 stroke, he made the excellent time of 47.2-5 seconds, beating cars of much larger dimensions. For the tourists a classification was made on an efficiency formula. Under this the Motobloc came out first, with an efficiency of 0.847. The others in order were single-cylinder Sizaire-Naudin, 0.829; single-cylinder Crespelle, 0.824; four-cylinder Delage, 0.811; four-cylinder Rolland-Pilain, 0.793, and single-cylinder Hurtu, 0.756.



Scene in Evreux at the Weighing-In Previous to the Start, a Voiturette on the Scales



57-Horsepower Daimler, with Which W. R. Conill of New York Is Making a Tour of Europe

NEWS BUDGET OF LATEST BRITISH AUTO AND AERO DOINGS

LONDON, Oct. 15—The Government's Development bill, which provides for the expenditure of the money raised by taxation of motor cars and petrol, is still far from settlement, but apparently the final arrangement will be considerably more favorable to motorists than was expected. The framers of the bill were strong on the matter of special motor roads (or "speedways," as they were soon styled), but the opposition of the various motor organizations has resulted in these ideas being dropped, and, instead, the major portion of the money will be spent on the improvement of existing main roads, particularly in the direction of making them dustless. A few new roads may be constructed,* but these will be open to all forms of traffic, and no speeding will be permitted.

As regards the tax itself, the Government states that a nominal power rating—such as the R. A. C. formula originally proposed—will not be used; instead, some means will be brought forward to measure the power actually developed. Details of this plan will be interesting, and at the same time the new arrangement circumvents those makers whose 1910 cars have been designed to come just within the R. A. C. rating standards originally announced. Another important concession is that no tax will be imposed on visitors bringing their cars to this country for touring purposes.

The auto buggy has made its first appearance over here. A Coventry firm has taken up the agency

for the Duryea "Buggyaut," and the first car is already on the road. The type is something entirely new to the British motorist, and, as may be imagined, a great amount of interest is evinced in its construction. From the number of inquiries received, the agents are convinced that there will be quite a good market for this vehicle.

Interviews with Lieut. Shackleton since his return from the South Polar expedition have revealed his strong belief in the advantages of motor transport for exploration work of this kind. The special Arrol Johnston car which he took with him did good service, and had the vehicle been of the sledge, instead of the wheel, type, it would have been used for the final stages of the journey over the soft snow of the Barrier. The new expedition, in charge of Capt. Scott, will be provided with motor sledges, but details of their construction are not yet available.

Additional to the descriptive article which recently appeared in *THE AUTOMOBILE*, referring to the new British styles in motor bodies, the accompanying photographs show further developments of the "Torpedo" style. The last car is particularly graceful in its lines, and it is the property of F. A. Bolton, a well-known Midland automobilist. The first illustration shows one of the 57-horsepower six-cylinder Daimlers, with valveless engine, purchased by W. R. Conill, of New York, for use on an extensive European tour. It will be noticed that both cars are equipped with detachable wire wheels,



Two Americans Prominent in the British Aerial and Automobile World—Colonel Cody and Charles Y. Knight

*In the form of loops round big towns.

different methods being adopted for carrying the spare wheel. The adoption of this by an American will be watched with particular interest, for this type of wheel has made so little progress there.

How Matters Aeronautical Are Progressing in England

Matters aeronautical are progressing apace at present, and before another month is completed there should be much to record. The two principal events on the list are the attempts for the *Daily Mail* \$50,000 prize for the journey from London to Manchester, and also the Aviation week at Blackpool.

The distance from London to Manchester in a straight line is 180 miles, and during the journey two stops will be permitted for the purpose of replenishing the fuel tanks. Col. Cody is the first to make active preparations for the attempt, and during the past week he has been carefully mapping out route and selecting numerous suitable landing places, so that he may be able to make his two stops according to his convenience during the flight. The accompanying photo shows Col. Cody on the occasion of his visit to Coventry, which is exactly half-way between the two places. Additional interest is given to the picture by the fact that Col. Cody's mentor is Charles Y. Knight, who is busy demonstrating the advantages of the Knight-Daimler engine.

Cody's attempt will take place in the next few days if the weather is suitable; in the meantime larger fuel tanks and an extra water supply are being provided on his machine.

It is not unlikely also that Blériot will make the attempt, in spite of the published statements that he is retiring from competitions for the present. As the result of Blériot's recent visit, the announcement is made that the Humber Co., of Coventry, is commencing straightway the manufacture of Blériot monoplanes. Inquiries show that this is quite correct, and that at its mammoth works the Humber firm has already got out specifications for the first batch of 100 machines. The list price has been fixed at \$2,000 each. The Humber Co. has also secured sole rights for the manufacture of the Farman machine, and as Mr. Farman is arranging to stay at Coventry for the next few weeks, it is quite possible that he, too, will endeavor to make the journey to Manchester.

The Blackpool Aviation week is now definitely arranged to commence October 18. Contracts to appear have been signed by Farman, Paulhan and Delagrangé, and the Société Ariel has promised to provide two Wright machines with competent pilots. An excellent ground has been secured two miles from the town, and stands are being erected for 15,000 persons.

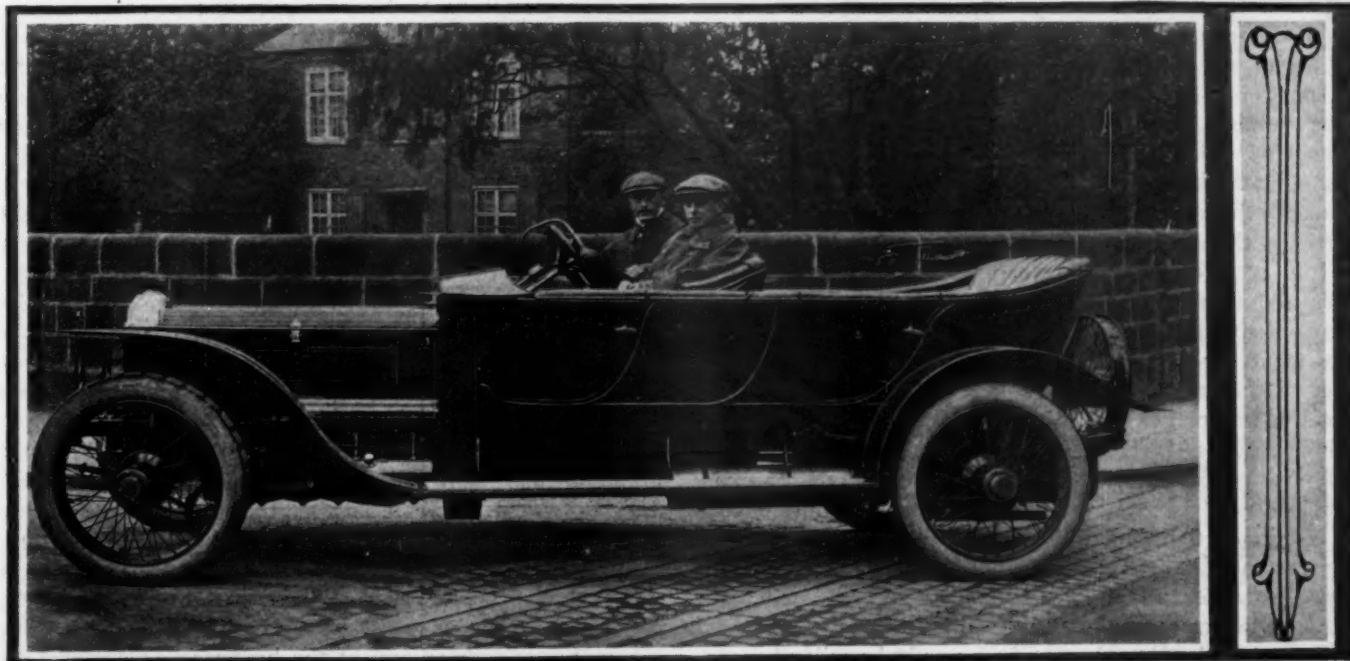
BRITISH DUST-LAYING EXPERIMENTS

LONDON, Oct. 12.—The Roads Improvement Association has just issued a report on the recent trial of calcium chloride as a dust preventive. Calcium chloride is produced in large quantities as a by-product in the ammonia-soda process of manufacturing common washing soda and in certain other chemical process. In its common form the chemical contains 40 per cent of water, but other definite varieties have 25 per cent water or even less. The common form costs \$12 per ton at the works. In all its states it has in a marked degree the property of absorbing moisture from the surrounding atmosphere, and if left exposed to damp air it eventually becomes a thick syrupy liquid through the absorption of moisture. If then it is exposed to a dry atmosphere it will gradually part with some of this moisture till it regains its original condition. It is on this property that the utility of calcium chloride for laying dust on roads depends.

The chemical was tried both in the wet and the dry methods. In the former the granular chloride was dissolved in water in the proportion of one hundred weight to each 100 gallons, and this solution was sprayed on the road from a watering cart. The second method was effected by distributing the chloride dry over the surface of the road. Two consecutive half-mile stretches on the main London-Staines road were treated in the two ways on June 12 and careful observations were then made each day till August 12. The result of the observations demonstrated that while both methods were effective in laying the dust to a marked extent, the dry method of applying the chemical gave more lasting results than were obtainable with the wet method. The total cost was \$26 and \$16 respectively, so that the dry method would seem to be undoubtedly the more advantageous.

The association is bringing the results of the experiments before the notice of all country surveyors, and it is expected that during next Summer an organized attempt will be made to lay the dust on all main roads passing through populous parts.

Queen of Siam Orders a Napier—An especially fine piece of body work was that done on the Napier omnibus body purchased for the use of the Queen of Siam. Round the royal palace at Bangkok there are miles and miles of fine roads, through which the ladies of the court have been in the habit of walking. Now, having adopted a more modern means of locomotion, they will doubtless cover a greater country, and more pleasantly.



A Particularly Graceful British "Torpedo" Body—Property of F. A. Bolton, a Midland Autoist.

THE AUTOMOBILE

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INTERNATIONAL TOURING CONTROL

"Bureaucracy discomfited" might summarize the story of the Paris international congress for the regulation of automobile traffic. Thousands of gilt-braided officials, whose sole duty has always appeared to be to prevent anybody from ever accomplishing anything, face the loss of their snug positions and the necessity of working for a living like ordinary mortals. Truly it is deplorable. The volubly polite, regretfully firm Frenchmen—"But, monsieur, it is impossible!"; the erect and soldierly Germans, with heads of a most surprising woodenness; the Italians, those graceful cigarette smokers, all are doomed. Perhaps the American tourist will shed a parting tear.

Like most other great reforms, the only thing remarkable about the proposed international passport is that it was not thought of long ago. There are no real difficulties whatever in its application. Nobody gets any money out of the triptyques and customs deposits, except the bonding companies which hold the stakes. The countries which enter in the agreement will actually receive a direct financial profit from the saving of the wages of the many officials now necessary. Examinations of automobiles to ascertain their suitability to road conditions, and of drivers to test their operative skill, might just as well be made once for all, and their results accepted wherever car and driver may go. The German examiner does not believe that the French examiner would be wilfully mendacious, but rules are rules, and he must make a pretense

at least of earning his salary. So it goes, each country stupidly duplicating work which had been done before. One illuminating flash of intelligence suddenly reveals the absurdity of the old system, and makes a reform almost inevitable.

This convention, it must be emphasized, is not a gathering of club members, uncredited save by private organizations, merely to air their grievances. Each delegate officially represents his government, and in many cases has full power to act for it. The resolutions passed by the convention are practically certain to be adopted in England, France, Belgium, Germany and Italy. Moreover, the program of the convention covers practically every subject of legislation of interest to the automobilist except that of speed limits. Although it would be desirable to include this as well, everyone recognizes the fact that speed depends too much on local conditions and sentiment to permit any agreement at present.

Of even greater moment to the automobilists of this country is the paragraph in the story of the convention which explains that, although the United States has a representative in the convention, he is unable to act in behalf of his government. Picture the amazement of the European delegates when they learned that the United States, although supposedly a single country, was divided among itself exactly the same as the different states of Europe, and that before it could take active part it would first need a similar convention of its own. It is by no means a flattering testimonial to American progressiveness and initiative.

"BUILT ENTIRELY IN OUR SHOPS"

In the parts industry to-day the press of business is so great that the parts maker must refuse orders. The disgruntled maker having his order refused, decides to make his own parts hereafter, and so the parts maker loses future business. Since the latter is so overworked at present, he does not mind this in the least.

But this congestion is going to result in more manufacturers installing tools and equipment so as to be able to make their own engines, transmissions, etc. This will mean that more cars will come under the class of "built entirely in our own shops," the advantages of which no one denies. More than all that, although not quite so close to the manufacturer's and user's hearts, is the influence on trade as a whole.

This is bound to be beneficial, for with more capital invested in land, buildings, and equipment, any business assumes a more stable position. So, too, as to the disposal of the resulting cars, the greater the output, the more care that will be used in disposing of them and in creating a stable market so as to keep the factory busy at all seasons. This should settle down very soon—there are many indications that some firms have already done so—to a business of unwonted stability with the "hot air" and "flim-flam" all eliminated, as well as the season and the model bugaboo, so that the automobile industry as a whole will line up alongside of the typewriter, furniture, clothing, and other similar businesses. These, in a broad way, may be said to have no seasons or models, and their yearly business is very carefully worked up in a quiet way, without any of the hysterics which have attended the automobile business in the past.

FOR MUCH NEEDED INTERNATIONAL RULES OF THE ROAD

By W. F. BRADLEY

PARIS, Oct. 15—Eighteen nations represented by sixty-three delegates are united in Paris for the purpose of making automobile regulations throughout Europe as uniform as possible and thus abolishing the difficulties in the way of international travel. The delegates are not representatives of automobile clubs, but the accredited representatives of their respective governments, having in nearly all cases full power to act for them. The congress is one that means business.

Europe has the misfortune to be divided into a score of countries, each one of which has its own way of controlling automobile traffic and its own conditions of admittance into its territory. As the automobile has made touring among these different countries almost as common as road intercourse among the different States of the Federal Union, the authorities have awakened to the disadvantage of individual laws, hampering travel and hindering free intercourse. Germany asked France to call together a conference to consider this question. France willingly acceded and every nation in Europe accepted the invitation.

America also asked to be allowed to come in, with the result that William S. Hogan, the A. C. A. delegate in Paris, was officially appointed by the Secretary of State. But America needs internal reform before she can usefully participate in a congress for the uniformity of automobile regulations, and it was this point that Mr. Hogan was instructed to make clear. Until there is a Federal automobile law it is impossible for the Secretary of State to give anybody power to sign an automobile traffic convention on behalf of the United States. The opinion of the American delegate is that this movement in Europe will help forward a Federal automobile law more than anything else. If Europe, with its score of nations speaking different languages, having different tariff rates and different customs, can come to an understanding on automobile circulation, why should not the United States of America?

Summary of What Is Wanted

There are nine distinct items on the program, as follows:

- (1) Conditions to be fulfilled by all automobiles before being put into circulation.
- (2) Conditions to be fulfilled by drivers of automobiles.
- (3) International recognition of driving certificates and national registration numbers.
- (4) The types of registration numbers, and the way in which they shall be carried.
- (5) Types of horns and other signaling apparatus.
- (6) Rules of the road covering overtaking and passing other vehicles.
- (7) Road signs and danger signals.
- (8) The recognition of road regulations in force in each country.
- (9) The creation of frontier stations and customs offices authorized to carry out the formalities provided for in the international regulations.

Under Article 1 will be set forth the various conditions that an automobile must fulfill before being put into use. Thus, in France, for instance, before a car can go on the road it must be examined by a government engineer and meet certain requirements regarding brakes, freedom from explosion, fire, noise and disagreeable smell. There are several countries, America and England among them, which have no such examination. But custom has gone even further than the government regulations, and there is not a car built by a reputable firm which could not come up to the standard of safety proposed by the congress.

Article 2, dealing with drivers, is a more knotty problem, for the congress proposes that a severe examination on the lines of that already existing in France shall be instituted. No person under eighteen could hold a driving license; in every case an examination of ability must be held and each nation would have the power to withdraw the licenses where the authorities saw the necessity for such a course. To introduce such a

scheme every nation would have to be prepared to undertake a certain amount of internal reform.

The first two points agreed upon, the third follows naturally, for if a common understanding has been arrived at on the examination of cars and the issuing of driving licenses, there is no reason whatever why a New York registration number should not be accepted in Paris and a New Jersey driving license received without question in Berlin. It is understood, of course, that New York will only issue registration numbers under the international regulations and that New Jersey will examine its drivers and license them on the same international basis. But this should not be impossible.

The size of the registration figures and the way in which they shall be carried is not a matter likely to cause any difficulty. Article 5, dealing with types of horns, is also readily settled.

Turning Left Not Likely to Be Adopted

Article 6, dealing with rules of the roads, is a difficult point. All the States in the Union follow the common rule of keeping to the right. In Europe it is not so, the majority keeping to the left, but England having a rule that all traffic shall keep to the left. Curiously, in certain countries, notably Italy, the two rules are in force, in some towns it being necessary to drive to the left and in others to keep to the right. The congress appears to favor an international driving law under which all vehicles shall keep to the left, as is done in England. With the driver placed on the right-hand side of the car, it is claimed that this is the safest rule. It is doubtful, however, if it can be passed, for the change is so drastic that every nation will hesitate to make it. It is certain, however, that those nations that have the two rules in force will have to select either one or the other.

Road signs and danger signals can readily be agreed upon. Indeed, a basis for action has been made in the signs without lettering now used in France and various parts of Europe and recently approved at the international automobile congress. Some of these signs were used in the 1907 Vanderbilt race.

The recognition of road regulations in force in each country is also a matter that should not cause much difficulty. If, as is probable, it is found impossible to establish international driving rules, it is not difficult for each nation signing the agreement to make the necessary detail internal improvements and simplifications and agree to recognize the laws of the other nations. It is, in fact, merely a continuation of the present conditions.

Vexing Matter of Customs Duties

Article 9, on customs and frontier stations, particularly interests Europe and Americans who tour Europe. The present improved system consists of the issuing of triptyques by the various touring associations. Thus, if you are an American and wish to visit France you can, before leaving home, arrange with the Touring Club de France, deposit your duty, receive in return a threefold piece of paper and enter France as easily as crossing the East River. The same can be done for several other European countries. The result is that there is no money transaction at the frontier. You make your deposit through your banker at home and are refunded by him on your return.

The system is a concession on the part of the various custom authorities of Europe. It is a concession, indeed, that is not always sufficiently appreciated by the automobilist, who does not see the years of labor necessary to convert the authorities and the large sums guaranteed by the Touring Club of France and other associations.

The defect of the system is that for each country issued a deposit must be made. Thus the American who intends to do Europe thoroughly has to obtain about half a dozen triptyques and make a heavy deposit with his banker. It is proposed that

there should be one international triptyque, and that the amount deposited on it should be equal to the highest tariff of the various contracting countries. Thus, if an American car, for instance, visits Europe, enters and leaves several countries, but enters and does not leave Italy, the officers of that nation would claim that the deposit be handed over to them in payment of duty. This, in fact, is what is done now, with the difference that instead of one single deposit there are half a dozen different ones and half a dozen different triptyques to be carried round for presentation

at the various frontier stations where they must be presented.

With the international passport the automobilist would be able to enter and leave any country in Europe—with a few rare exceptions—on the presentation of a paper. The authorities have nothing to lose by such a scheme and the automobilist has everything to gain. In all probability this scheme will be adopted by the nations now issuing triptyques. The nations that have not yet adopted the triptyque, among them being Russia, Turkey, Greece and the eastern states, will doubtless come in later.

AGAIN FRANCE WANTS TO RACE HER OWN WAY, OF COURSE

PARIS, Oct. 15—French automobile constructors have got over their racing fright apparently, for the Sporting Commission of the Automobile Club of France has just decided that there shall be a Grand Prix next year if the principal constructors desire it. The full committee of the club has approved this decision. As the Sporting Commission is composed of representatives of all the leading French firms, especially those having given the greatest encouragement to racing, the probabilities are that the event will be held. A referendum will be taken immediately and a decision arrived at before the end of October. As the race cannot be held until June or July, constructors will have about eight months in which to make preparations.

It has been decided in principle that the 1910 Grand Prix shall be held over a distance of five hundred miles, and that it shall be open to all cars without restriction of bore and stroke or weight. After the Gordon Bennett races the weight limit of 1,000 kilos was continued for a couple of years. Then came a maximum bore of 155 millimeters for a four-cylinder engine. This was further reduced by the International Association of Automobile Clubs to 130 millimeters for 1909. Owing to the action of the French constructors, however, no race was held this year, and although a few 130 millimeter cars were built, they have never been tested in a long distance event.

France Wants Rules of Her Own Making

It will be remembered that the 155 millimeter rule provoked a war between the International Association and the Vanderbilt Cup Commission, which declined to accept this rule. It might be supposed that if an international meeting were needed to frame a racing rule for 1908 and 1909, the same would be necessary for 1910. But this is not so when the French Club is the organizer. It believes that a no restriction rule is the best for the health of the automobile industry, and America, England, Germany, Italy, and Belgium must accept the rule without a murmur.

The proposal to hold a race for cars of any power or any weight is not new. It was brought forward at previous international conferences, its strongest supporters being a group of French manufacturers. It was then feared that the result of such a rule would be the production of such cars as the famous eight-cylinder Darracq sprinter, of Florida fame, capable of doing two miles a minute. Experience has shown that such a car would be its own destroyer on a 500 miles test. Neither in 1907 nor in 1908 did the cars with the most powerful engines come in first. The ability to hold to the road, and especially the wear of tires, much more pronounced on some cars than on others, considerably influenced the results. Partisans of the no-limit rule maintain that it will open a new field of investigation, instead of directing effort entirely into one channel. Something will doubtless be gained in speed, and tires are there to keep weight down to a reasonable limit.

Anjou and Dieppe Both Want Race

It is not yet known where the French Grand Prix will be held. Anjou was promised the race this year, and is still prepared to offer its roads in 1910, together with a subsidy of \$20,000 to the club. Dieppe, which had the race in 1907 and 1908, has also come forward with an offer of the same course. Other courses

are not lacking, and it may be a month before the Racing Board makes a selection. However the French automobile constructors may regard racing, there can be no doubt that the country people are keenly alive to the advantages to be reaped from such contests. Were it not regarded as practically certain that the choice will lie between Anjou and Dieppe, a dozen other localities would quickly come forward to offer circuits.

A. C. F. Will Also Have Aeroplane Meet

In addition to its automobile Grand Prix, the Automobile Club of France will undertake the organization of aeroplane races next year. This decision has been arrived at on the proposition of Marquis de Dion, approved unanimously by the full meeting of the club. The races will extend over one week and will commence immediately after the great national horse race at Longchamps, marking the height of the fashionable Paris season. It is not yet known where the aerodrome will be located, but a site near Paris is most probable. Valuable prizes will be offered. There has been a great rush of former automobile racing drivers into the ranks of the aviators. The drivers find aeroplanes easy to control, and certainly no more dangerous than their former occupation; at the same time the emoluments are by no means to be despised. Among those whose names have often been heard in connection with the older sport are Rougier, Gobron, Le Blon and Fournier. Baron De Caters, too, now pilots a Voisin biplane.

GERMAN TRADE STATISTICS

BERLIN, Oct. 12—Some of Germany's foreign trade during the first seven months of the present year shows a slight increase in its exports as compared with a decrease in the number of motor cars sent into the Empire. It may, therefore, be said to be of a favorable nature on the whole, though not of so decided a character as was expected in view of the general upward trend. While the majority of countries have remained true to German cars, Great Britain and France have each bought considerably less; but this is in keeping with France's return trade with Germany. The exact figures are:

January 1 to July 31, Imports into Germany:

	1909 dwt	1908 dwt
Austria	570	670
Belgium	1519	1995
France	3441	4039
Great Britain	296	106
Italy	835	910
Switzerland	502	361
United States	53	140

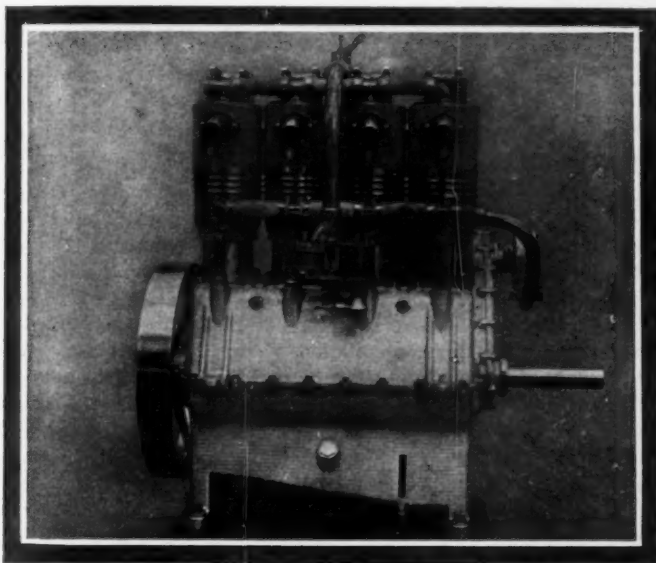
January 1 to July 31, Exports into:

	1909 dwt	1908 dwt
Austria	2297	1503
Argentina	178	144
Belgium	341	61
Brazil	1	126
Denmark	410	169
France	1209	1752
Great Britain	1196	1612
Holland	600	172
Italy	378	187
Dutch Indies	111	84
Russia	1522	1660
Roumania	318	113
Switzerland	405	241
Spain	193	161
Sweden	184	142
United States	670	240

DE LAMBERT FLIES OVER EIFFEL TOWER

PARIS, Oct. 18—The Juvisy aeronautic meet scored its first great success to-day when Count de Lambert, in his Wright aeroplane, flew from the aviation field to Paris and back, circling over the Eiffel Tower. In a straight line the distance is about 30 miles. The aviator made the round trip in 49 minutes. His greatest height, attained over the Eiffel Tower, is reported to have been 1,300 feet. Orville Wright was a witness.

De Lambert kept his plans secret from everybody except two officials of the Aviation Society, one at Juvisy and the other on the Eiffel Tower, who timed him. The crowd of 20,000 people which saw the beginning of the flight was astonished when the aeroplane started out across country and disappeared behind the hills to the northward. Fifteen minutes later pedestrians along the Seine began to stare upward at what they thought was a large box-kite. They soon saw their mistake, however. The aeroplane rounded the apex of the tower, which is over 1,000 feet high, and then sailed away to the south. Meanwhile the anxiety at Juvisy grew intense. A telephone message informed the spectators of what De Lambert was doing, and when he reappeared, flying at a height of 500 feet, the crowd went wild.



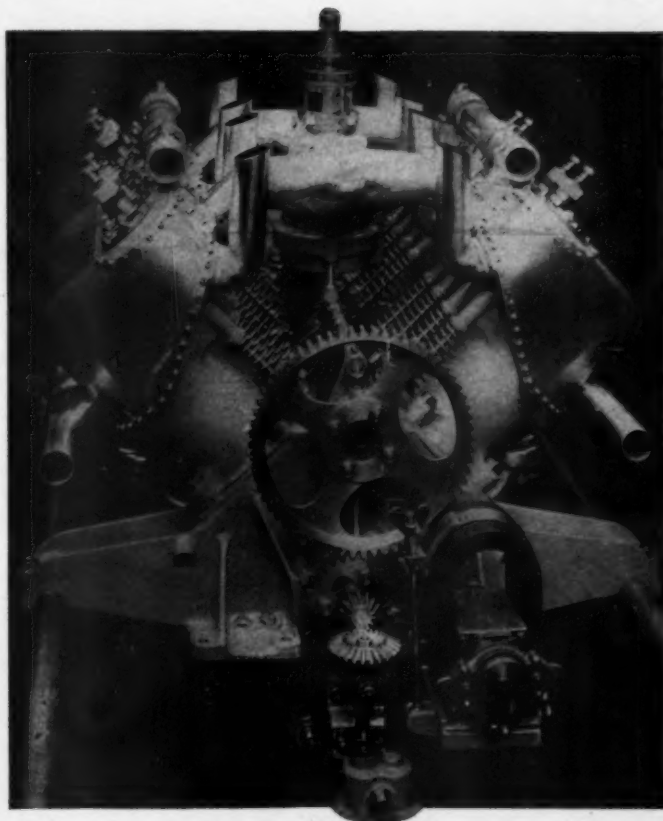
Panhard's 40-Horsepower Aero Motor Has Copper Jackets

THE WOLSELEY AERONAUTIC MOTORS

Claiming the championship of the sea with the motor-boat *Wolseley*, the famous English house of Vickers, Sons & Maxim, Ltd., has turned its attention to motors for dirigibles and aeroplanes. A complete series of these, ranging from 50 to 400 horsepower, has been brought out, and, backed by their maker's reputation in the line of cannon, torpedo-boat engines, and similar fine machine work, they should at once assume an enviable position in this new industry.

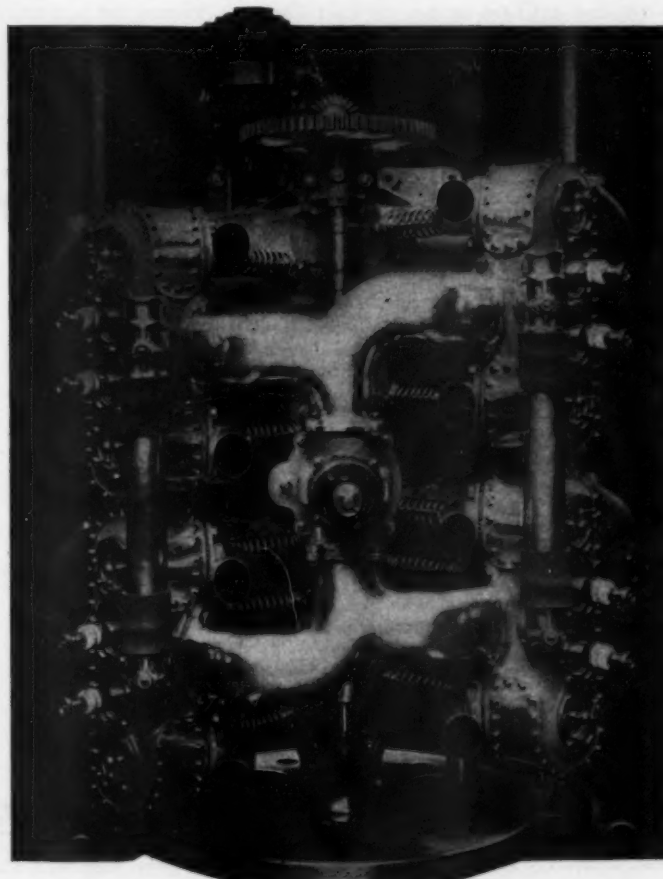
The smallest motor, particularly adapted to aeroplane construction, is rated at 50-horsepower, but is claimed to be capable of delivering 75. Its eight cylinders are arranged in a "V" to shorten the crankshaft and secure a more compact design. The ignition system, the carbureter, lubrication and water circulation follow automobile practice. The Bosch magneto is used. The carbureter has an additional air intake for use in high altitudes. Lubrication is forced by a centrifugal pump. The water packets are of sheet aluminum, riveted in place upon the cylinders. The motor turns normally at 1200 or 1400 r.p.m.; it may thus have the propeller either fixed directly on its shaft, or driven through a chain or belt affording a reduction in speed.

The dirigible motors, similar to those used in boats, all have vertical cylinders set in line on the crankshaft. They are made in three sizes: 135-horsepower, 6-cylinder, 200-horsepower, 8 cylin-



V-Type of Wolseley Engine Has Gears in Front

der and 400-horsepower 12-cylinder. A new and praiseworthy feature is the spring suspension, by means of four one-quarter elliptic springs, which should entirely prevent any vibration being transmitted to the rest of the machine.



Wolseley Motor from Above, Showing Peculiar Inlet

S. A. E. WINTER MEETING TO HAVE WIDE RANGE OF SUBJECTS

THE meetings of the Society of Automobile Engineers have each year more decidedly proved the value of this society to the various professional and other interests identified with the self-propelled vehicle. Many of the papers read and discussed at the semi-annual meetings show that, busy as the automobile engineer is, many a one still finds time unselfishly to give to the world in well prepared papers the result of his experience. It is a pleasant thing to record the members of this latest and most important field are as emphatically leaders in this liberal sharing of their knowledge as they are in the broad blazing of new trails for mechanical engineering generally.

No doubt many will be present during one or the other of this winter's shows at New York. Such of these as would care to be present at the professional meeting of the Society of Automobile Engineers may be assured of a hearty welcome. Their contribution to these discussions will be as welcome, as will also more complete papers; the latter should be sent in to the society's offices at No. 2 Rector Street, New York, to be in the society's hands by November 30 for printing and general

distribution before the meeting. Papers and discussions from an engineering standpoint, including also matters of operating finances are in order. Among the subjects that discussion at the winter meeting has been asked for are:

- "Standardization of Pneumatic Tires."
- "Taxicabs—Requirements and Operating Cost."
- "Carbureters—Kerosene Carbureters."
- "Railway Motor Cars."
- "Drawing Room Systems."
- "Truck Tires."
- "Valves in Head vs. T Head."
- "Alcohol as Fuel in Internal Combustion Motors."
- "Silencer."
- "Radiator, Design and Efficiencies."
- "Critical Temperatures, Cooling Curves of Alloy and Other Steel."
- "Two-Cycle Motor Efficiency and Results."
- "Journal Loads in Transmission Gears."
- "Placing Society on More Professional Basis."
- "Efficiency of Spur, Bevel Worm Gears and Universal Joints."
- "Relative Efficiency of Four-Wheel Front and Rear-Drive of Commercial Vehicles."
- "Detachable vs. Demountable Rims—Combination Rim."
- "Commercial Vehicle Depreciation."

ROADMAKERS' GATHERING IN COLUMBUS

COLUMBUS, O., Oct. 18—Arrangements are being made to appropriately decorate Columbus upon the occasion of the annual meeting of the American Roadmakers' Association, the Ohio Good Roads Federation, and the Ohio County Commissioners' Association, all of which will meet in Columbus Oct. 26 to 29. The Chamber of Commerce will decorate the electric arches spanning the principal streets, and many business houses will decorate.

Ground has been broken on East Eleventh Avenue for building a stretch of model highway to be constructed by the Robeson Process Company, of Cleveland, from the refuse of paper mills, which is claimed to be excellent for road building. This has been successfully tried in other states, notably northern New York.

PLAN TO USE CRUDE OIL IN ENGINES

Experiments on the utilization of crude or "scalp" oil in internal-combustion motors seem to promise great economy in fuel cost, especially in large power-plant installations. Thomas A. Nevins, president of the Newark (N. J.) Gas Company, is interested in a process for turning this by-product, for which at present there is little market, into a gas of the nature of producer gas. Previous attempts to utilize crude oil in this manner have failed because of the accumulation of tarry residues and soot, which clogged the working parts of the engines in which the gas was used. No details of the new process have been published, but Mr. Nevins' engineers state that a converter of the new type has been successfully used on a motor boat. The fuel expense has been reduced to about one-twelfth that of gasoline.

THE AUTOMOBILE CALENDAR

AMERICAN

Shows, Meetings, Etc.

- Nov. 6-13.....Atlanta, Ga., Auditorium-Armory, National Automobile Show, auspices of National Association of Automobile Manufacturers. Samuel A. Miles and Alfred Reeves, General Managers, 7 East 42d Street, New York City.
- Dec. 31-Jan. 7....New York City, Grand Central Palace, Tenth International Automobile Show; American Motor Car Manufacturers' Association, with Importers' Automobile Salon and Motor and Accessory Manufacturers. Alfred Reeves, General Manager, 505 Fifth Avenue, New York.
- Jan. 8-15.....New York City, Madison Square Garden, Tenth National Show, Association of Licensed Automobile Manufacturers.
- Jan. 17-22.....Philadelphia, Second Regiment Armory, Automobile Show. J. H. Beck, Secretary, 216 Odd Fellows Building.
- Feb. 5-12.....Chicago, Coliseum, Ninth Annual Automobile Show, National Association of Automobile Manufacturers. S. A. Miles, General Manager.
- Feb. 14-19.....Buffalo, N. Y., Broadway Arsenal, Eighth Annual Automobile Show, Automobile Club of Buffalo. Dal H. Lewis, Manager, 760 Main Street.
- Feb. 21-26.....Binghamton, N. Y., State Armory, Automobile Show. R. W. Whipple, Secretary.
- Feb. 22-26.....Kansas City, Mo., Convention Hall, Fourth Annual Automobile Show.
- March 19-26.....Buffalo, N. Y., Convention Hall, Third Annual Power Boat and Sportsmen's Show. D. H. Lewis, Manager.

- March 5-12.....Boston, Mechanics' Building, Eighth Annual Automobile Show, Boston Automobile Dealers' Association. Chester I. Campbell, General Manager, 5 Park Square.

FOREIGN

- Nov. 12-20.....London, Olympia, Eighth Annual International Automobile Show, Society of Motor Manufacturers and Traders.

AMERICAN

Races, Hill Climbs, Etc.

- Oct. 23.....San Francisco, Road Race, Automobile Club of California.
- Oct. 28-30.....Dallas, Texas, Three-Day Track Meet, Dallas Automobile Club.
- Oct. 30.....Vanderbilt Cup Race, Long Island Motor Parkway, Motor Cup Holding Company.
- Nov. 6-8.....Phoenix, Arizona, Road Race, Maricopa Automobile Club.
- Nov. 8-9.....Savannah, Ga., Georgia Highway Reliability Contest to Atlanta, Savannah Automobile Club.
- Nov. 9.....Atlanta, Ga., Track Races, Atlanta Automobile Association.
- Nov. 20-21.....New Orleans, Annual Fall Meet, New Orleans Automobile Club. Homer C. George, Secretary.
- Nov. 22.....Denver, Col., Start of "Flag to Flag" Reliability Run. G. A. Wahlgreen, Manager.
- Dec. 29-30.....Philadelphia, Fourth Annual Midwinter Endurance Contest, Quaker City Motor Club.
- Feb. 4-6.....New Orleans, Annual Mardi Gras Speed Carnival, New Orleans Automobile Club.

PALACE SHOW COMPLETES LIST OF EXHIBITORS

FINAL diagrams for the Tenth International Automobile Show which opens New Year's Eve in Grand Central Palace, New York, under management of the American Motor Car Manufacturers' Association, shows 72 makers of leading American cars and 15 importers of foreign cars, with six additional American cars on the waiting list, making a total of 93 makers of automobiles. This is the greatest number of automobile concerns brought together in any show in New York.

Members of the Motor and Accessory Manufacturers, totalling 110, October 22, will draw for space for the Palace affair, and with 104 accessory concerns not affiliated with the M. & A. M. and twelve on the waiting list brings the grand total up to 319 exhibitors in the Palace Show. Following is a list of the motor

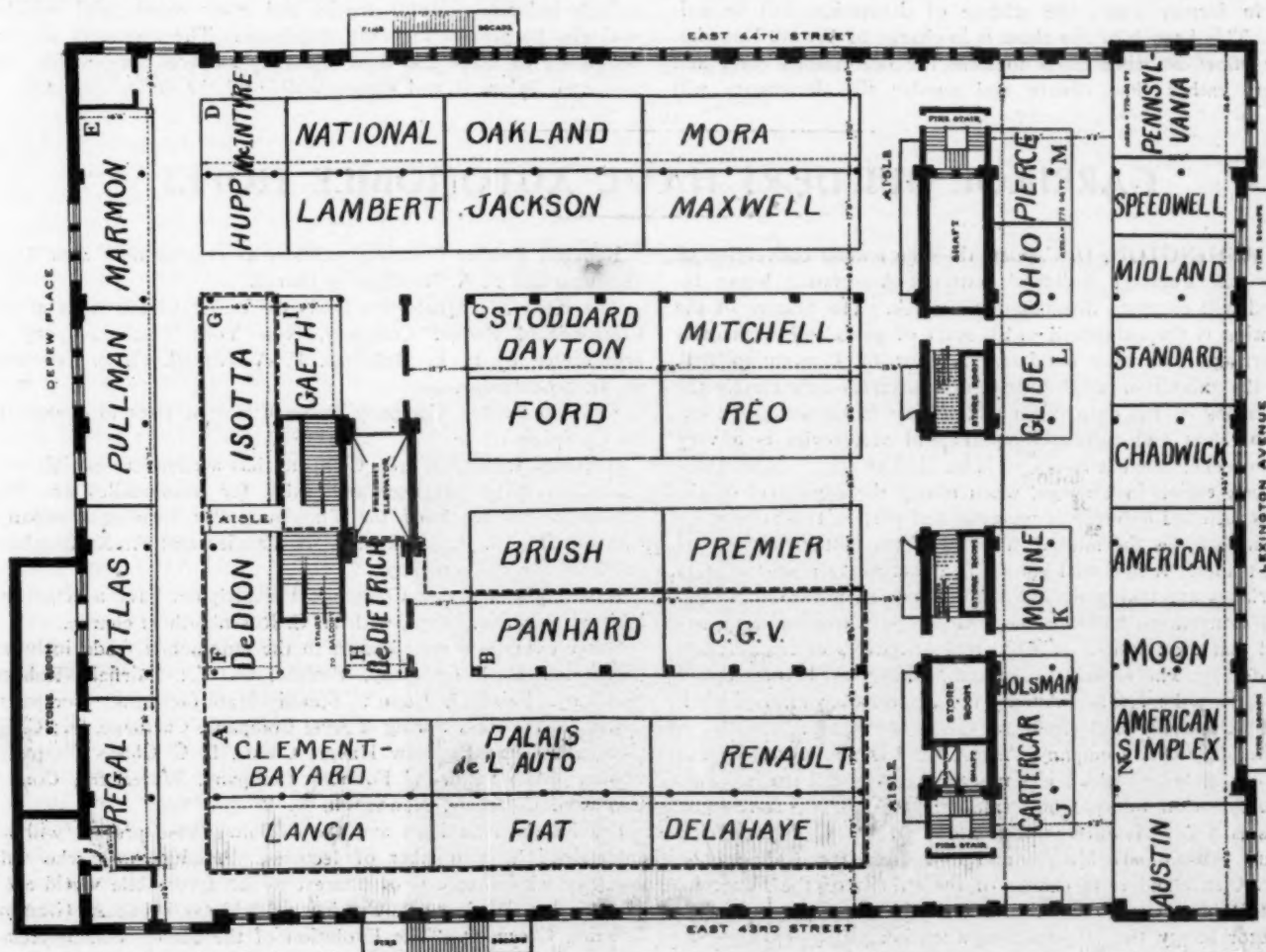
car exhibitors which have been allotted space in the Palace affair together with the main floor diagram. All American cars on the main floor are composed of members of the A. M. C. M. A. The foreign cars shown on the diagram are members of the Importers' Automobile Salon.

Unitt and Wickes, of New York, the official decorators of the show, have completed their drawings and models of the Trellis Garden or outdoor effect, which is to lighten the interior of the Palace, and the Show Committee are more than delighted with the result of their efforts. One of the most spectacular features of the decoration scheme will be an electric fountain at the end of the main exhibition hall where the heroic statue of "Age Instructing Youth" stood last year.

AMERICAN CARS

Name	Car	Address
American Motor Car Co.	American	Indianapolis, Ind.
American Motor Truck Co.	American Truck	Lockport, N. Y.
Allen-Kingston Motor Car Co.	Allen-Kingston	New York, N. Y.
Atlas Motor Car Co.	Atlas	Springfield, N. Y.
Austin Automobile Co.	Austin	Gd. Rapids, Mich.
B. C. K. Motor Car Co.	Kline Kar	York, Pa.
Bartholomew Co.	Glide	Peoria, Ill.
Black Manufacturing Co.	Black	Chicago, Ill.
Brush Runabout Co.	Brush	Detroit, Mich.
Buckeye Mfg. Co.	Lambert	Anderson, Ind.
Cartercar Co.	Cartercar	Pontiac, Mich.
Carter Motor Car Corp.		Washington, D. C.
Chadwick Engineering Wks.	Chadwick	Pottstown, Pa.
Chase Motor Truck Co.	Chase	Syracuse, N. Y.
Cameron Car Co.	Cameron	Beverly, Mass.
Coates-Goshen Co.	Coates-Goshen	Goshen, N. Y.
Columbus Buggy Co.	Firestone	Columbus, O.
Crawford Automobile Co.	Crawford	Hagerstown, Md.
Dayton Motor Car Co.	Stoddard-Dayton	Dayton, O.
Demotcar Sales Co.	Demotcar	Detroit, Mich.

Empire Motor Car Co.	Empire	Indianapolis, Ind.
Fal Motor Co.	Fal-car	Chicago, Ill.
Ford Motor Co.	Ford	Detroit, Mich.
Gaeth Automobile Co.	Gaeth	Cleveland, O.
Grabowsky Power Wagon Co.	Grabowsky	Detroit, Mich.
Gramm-Logan Motor Car Co.	Gramm-Logan	Bowling Green, O.
Hart-Kraft Motor Co.	Hart-Kraft	York, Pa.
Holsman Automobile Co.	Holsman	Chicago, Ill.
Houpt, Harry S. Mfg. Co.	Houpt	New York, N. Y.
Hupp Motor Car Co.	Hupmobile	Detroit, Mich.
Inter-State Automobile Co.	Inter-State	Muncie, Ind.
Jackson Automobile Co.	Jackson	Jackson, Mich.
Jewel Carriage Co.	Ohio	Carthage, O.
Kissel Motor Car Co.	Kisselkar	Hartford, Wis.
Lansden Co.	Lansden	Newark, N. J.
Lion Motor Car Co.	Lion	Adrian, Mich.
McCue Co.	McCue	Hartford, Conn.
McIntyre, W. H. Co.	McIntyre	Auburn, Ind.
Mack Bros. Motor Car Co.	Manhattan	Allentown, Pa.
Martin Carriage Works	Martin	York, Pa.
Maxwell-Briscoe Motor Co.	Maxwell	Tarrytown, N. Y.
Metz Co.	Waltham-Orient	Waltham, Mass.
Metzger Motor Car Co.	Everitt	Detroit, Mich.



Main Floor of Grand Central Palace, New York, Showing Arrangement of Exhibitors Located There

Middleby Auto. Co.	Middleby	Reading, Pa.
Midland Motor Co.	Midland	Moline, Ill.
Mitchell Motor Car Co.	Mitchell	Racine, Wis.
Moline Automobile Co.	Moline	East Moline, Ill.
Moon Motor Car Co.	Moon	St. Louis, Mo.
Mora Motor Car Co.	Mora	Newark, N. Y.
Nagant Automobile Co.	Nagant	New York City.
National Motor Vehicle Co.	National	Indianapolis, Ind.
Nordyke & Marmon Co.	Marmon	Indianapolis, Ind.
Oakland Motor Car Co.	Oakland	Pontiac, Mich.
Otto, A. T.	Saurer	New York City.
Otto Sales Co.	Otto	Philadelphia, Pa.
Paterson, W. A. Co.	Paterson	Detroit, Mich.
Penna. Auto. Motor Works.	Pennsylvania	Bryn Mawr, Pa.
Pierce Motor Co.	Pierce	Racine, Wis.
Premier Motor Mfg. Co.	Premier	Indianapolis, Ind.
Rapid Motor Vehicle Co.	Rapid	Pontiac, Mich.
Randolph Motor Car Co.	Randolph	Chicago, Ill.
Regal Motor Car Co.	Regal	Detroit, Mich.
Reo Motor Car Co.	Reo	Lansing, Mich.
Schacht Mfg. Co.	Schacht	Cincinnati, O.
Seltz Automobile Co.	Seltz	Detroit, Mich.
Simplex Motor Car Co.	Amer. Simplex	Mishawaka, Ind.

Sharp, Wm. H. Co.	Sharp Arrow	Trenton, N. J.
Speedwell Motor Car Co.	Speedwell	Dayton, O.
St. Louis Car Co.	Standard	St. Louis, Mo.
Streator Motor Car Co.	Streator	Streator, Ill.
Sultan Motor Car Co.	Sultan	New York, N. Y.
York Motor Car Co.	Pullman	York, Pa.

FOREIGN CARS

American Züst Auto. Co.	Züst	New York City.
Benz Auto Import Co.	Benz	New York City.
Bowman Automobile Co.	Clement-Bayard	New York City.
Brewster & Co.	Delaunay-Belleville	New York City.
C.G.V. Import Co.	C. G. V.	New York City.
DeDion Bouton Selling Branch	DeDion	New York City.
DeDietrich Import Co.	DeDietrich	New York City.
Delahaye Import Co.	Delahaye	New York City.
Flat Automobile Co.	Flat	New York City.
Hotchkiss Import Co.	Hotchkiss	New York City.
The Hol-Tan Co.	Lancia	New York City.
Isotta Import Co.	Isotta	New York City.
Panhard & Levassor	Panhard	New York City.
Renault Freres Selling Agency	Renault	New York City.
S.P.O. Automobile Co.	S. P. O.	New York City.

GARDEN SHOW TO EXCEL ALL PREDECESSORS

MADISON Square Garden, already the abode of nine successive automobile shows, has been forced to yield up its last inch of space to accommodate the tenth annual show under the auspices of the Association of Licensed Automobile Manufacturers. For three years past the pressure has been intense, and each year it was thought that all the space available had been allotted; yet each following year some ingenious engineering has enabled a few feet more to be secured. This year it seems as if the limit must positively have been reached. Still M. L. Downs, the secretary, is being besieged daily for further grants, which he is forced to refuse. The growth and activity of the industry were never so well expressed as by this constant pressure for show space.

As in former years, the scheme of decoration will be uniform. This branch of the show is in charge of W. W. Knowles. Every effort is being made to have the decorations quiet and tasteful, rather than ornate and gaudy; the decorators will

strive for elegance and richness, and the fittings will be solid and substantial. The fact will be recognized that, after all, the cars are the show, and that the decorations are really but a frame, which serves its purpose best when it emphasizes the attractions of the exhibits, rather than draws attention away from them. The same policy of having all the furnishings and signs in charge of the managers will be followed.

One unusual feature of the show this year will be a large exhibit of motorcycles. This will be the only one of its kind to be held in New York, and will be several times larger than any previous show of the kind in the metropolis. Those who favor the "lonesome car" will be impressed by the great strides which have been made this year in this branch of the motor vehicle industry. Motor trucks and other commercial vehicles will also be present in great abundance. The managers are endeavoring to make the show not only as large as possible, but also well balanced and representative of the entire industry.

CARRIAGE BUILDERS HAVE AUTOMOBILE HOPES

WASHINGTON, D. C., Oct. 18—The annual convention of the Carriage Builders' National Association began today and will continue throughout the week. The feature of the convention is the exhibition of all sorts of parts and accessories for carriage and auto builders. A tour of Convention hall, where the exhibition is being held, demonstrates very clearly the interweaving of the automobile and vehicle industries. The exhibits of tires and automobile parts and accessories is a very creditable one, albeit it is not so large as that which marked last year's convention in Chicago, when nearly three-quarters of the exhibits included automobile material and parts. The attendance also demonstrates the mutual interests of the motor car and the vehicle trades. It is a well known fact that many manufacturers of carriages are taking up the manufacture of automobiles, and around Convention hall this week the hope was frequently expressed that the relations between representatives of the automobile and those who represent carriage building will become closer and closer in the future. Among the exhibitors who are identified with the automobile trade are the following:

Diamond Rubber Company, Akron, O., has an interesting exhibit, the feature of which is a motor buggy special tire.

A combination internal and side-wire tire for use on motor buggies is a new feature in the exhibit of the B. F. Goodrich Company, Akron. Mr. Murphy and T. D. Brewster are in charge.

A. P. Cleaveland is in charge of the exhibit of the Firestone Tire & Rubber Company, Akron, O. The Firestone side-wire and motor buggy tire is attracting attention.

The exhibit of the Goodyear Tire & Rubber Company is in charge of G. M. Stadelman.

Republic Rubber Company exhibits its regular line, with J. M. Hoffman and F. A. Hastings in charge.

The Kelly-Springfield tire holds the center of the stage at the Consolidated Rubber Company, New York. The company is represented by F. E. Holcomb, F. A. Kissell, H. S. Cox and M. G. Stockbridge.

Kokomo Rubber Company shows a line of tires in charge of D. L. Spraker.

Hartford Rubber Works Company has a complete exhibit.

Timken roller bearings and axles for automobiles are displayed in the booth of the Timken Roller Bearing Company, Canton, O. W. R. Timken, E. B. Lausier and A. N. Bingham are here for the company.

Rose Manufacturing Company, Philadelphia, have a large exhibit of Neverout lamps, with H. C. Rosenbluth in charge.

Other exhibitors well known to the automobile trade include: McKinnon Dash Company, Buffalo, N. Y.; Fairfield Rubber Company, Fairfield, Conn.; Spitzli Manufacturing Company, Utica, N. Y.; Hess Spring & Axle Company, Carthage, O.; C. C. Cowles & Company, New Haven, Conn.; L. C. Chase Company, Boston; Manufacturers' Foundry Company, Waterbury, Conn.; Fabrikoid Company, Newburgh, N. Y.

Besides the exhibition and the exhibits, those present will be entertained by a number of lectures. Among those who will speak or whose topic is of interest to the automobile world are: Second day, Wednesday, October 20, address by B. A. Gramm, Bowling Green, O., "The Evolution of the Motor Vehicle Relative to the Wagon Builder"; third day, address by Hugh Chambers, Detroit, Mich., "The Principles of Salesmanship."

AUTOMOBILES TAKE TO THE RAILS IN TWO STATES

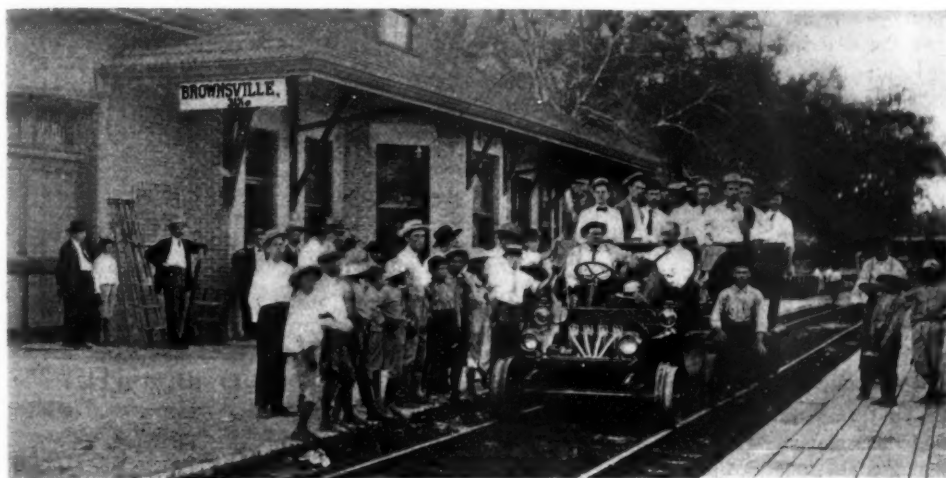
DELIVERY of mails is of paramount importance, and is not allowed to stop for wind, weather, or other similar obstructions. When reliance is placed upon railroads, and the

ville, Texas, is connected with the world by the St. Louis, Brownsville, and Texas Railway. On the occasion of recent floods in that part of the country, the town was cut off, when the flood washed away a large bridge about forty miles north of Brownsville, and all of the railroad rolling stock was north of the break.

"After waiting four days for mail," says C. Everson, of Brownsville, in describing the plight of the community, "we rigged up a Franklin runabout, fitted flanges to the wheels and operated this end of the road between Brownsville and the bridge."

"The train consisted of two flat cars, on which we hauled passengers and baggage. 'She' gave excellent satisfaction as a railroad engine and made better time than the regular trains over the same road."

In the illustration, the revamped car is shown pulling but one of the flat cars, although the number of men visible would seem to indicate that there were two or even three flat cars behind the sturdy little locomotive, as the Franklin became for the time being. The lack of a bonnet would identify the car anywhere.



Franklin Fitted with Flanged Wheels Doing Train Service Out of Brownsville

mails do not materialize, it is then time to take to the automobile, as a sure means of delivery. This was exemplified by an incident in the South recently. The town of Browns-

ville, Texas, is connected with the world by the St. Louis, Brownsville, and Texas Railway. On the occasion of recent floods in that part of the country, the town was cut off, when the flood washed away a large bridge about forty miles north of Brownsville, and all of the railroad rolling stock was north of the break.

PASSENGER SERVICE FOR CALIFORNIA MINING TOWN

MANY small mining towns of the West and Southwest are isolated, and have no regular means of communication with the larger cities nearby. This is particularly the case in the southwestern part of California and Nevada, where the mining towns have sprung up faster than any railroad, no matter how wealthy and well-disposed, could take care of them by building spur tracks from the main line.

One of the smaller mining towns of California, which is so situated is Stone Canon, which is twenty-two miles from Chanslor, itself a small place and situated two miles from Paso Robles. The latter has railroad service, said to be regular, while Chanslor has a sort of apology for service, but Stone Canon, has neither service nor apology, not even a stage line. There was, however, rails laid from Chanslor to the Canon, and Walter Chanslor, of the firm of Chanslor & Lyon, well-known automobile dealers of Los Angeles, conceived the idea of supplying the long-felt want by rigging up a touring car with steel wheels.

This was done and six cast-steel wheels were rigged up to fit a big six-cylinder Premier, which will make regularly scheduled trips between the two towns. Seven passengers will be carried, and for the service afforded, the fare is not excessive.

This service will place Stone Canon on the map and its citizens

in communication with the outside world by other means than the laboring burro. When the auto line was proposed by Chanslor, who has large holdings in the town, the residents there were enthusiastic over the proposition and a right of way twenty-two miles long was speedily granted. Long stretches of deep sand intervene between the towns of Paso Robles and Stone Canon. It takes many hours to make the trip by wagon. The motor car will make the trip in an hour or even less.



Premier on Rails Looks Peculiar with Six Wheels as in Service in California

SOME STARTLING INCREASES IN AUTOMOBILE EXPORTS

IN the summary of the detailed imports and exports for the month of August, and the eight months ending with August, the Department of Commerce and Labor shows that the exports in several directions have taken a wonderful upward turn. Such items as a 400 per cent increase in our exports to France, coupled with a 10.3 per cent decrease in our imports from that country, are particularly gratifying to all who have the best interests of the automobile business at heart.

Imports totaled 194 cars, valued at \$333,900, being an increase in the number of 8.4 and in the value of 18.8, showing that the average value is on the increase. These were divided as follows:

France.....	109 cars valued at	\$188,696, an average of	\$1,730
Italy.....	52 cars valued at	83,511, an average of	1,810
Germany....	9 cars valued at	20,589, an average of	2,280
United K....	7 cars valued at	16,224, an average of	2,030
All others....	16 cars valued at	24,940, an average of	1,860

The parts imported amounted to \$114,973, as against \$49,676 for

the similar part of last year. This gave a total value to the imports of \$548,874, which the export figures of \$658,556 easily surpassed. The latter were divided into parts, \$100,622, and the rest complete cars. The cars show a wide diversity of distribution, being allotted as follows:

Country	Amount	Change in Per Cent
British N. America.....	\$306,523	+76.5
United Kingdom	103,880	-17.5
France	78,693	+406.0
British Australasia	30,969	+142.0
South America	30,256	+379.0
West Indies and Bermuda.....	28,198	+366.0
Other Parts Europe.....	23,205	+380.0
Mexico	21,564	+37.0
Asia and Oceania.....	14,416	+37.7
Germany	11,923	-17.8

Unusual describes the margin of difference in the majority of cases, as shown in the table above.

MASSACHUSETTS HAS A ROAD CENSUS

BOSTON, Oct. 18—Another census of road traffic throughout Massachusetts was taken last week by the Massachusetts Highway Commission, the Metropolitan Park Commission, Boston Park Commission, and Newton Highway Commissioner. There were established about 250 stations, and at all of these a strict count of all passing vehicles was kept for fourteen hours each day, the count beginning at 7 o'clock last Sunday morning and ending at 9 o'clock Saturday night. The arrangements for the census were practically identical with those for the census that was taken in August and which showed that 42 per cent of the total traffic was motor driven. The majority of the counting stations were on the State roads, only a few being established by the other bodies that assisted the Highway Commission.

The August census was taken purposely at a time when the traffic over the State roads was abnormal, but this week's census is expected to show the relative amounts of traffic in its normal condition. The Highway Commission does not expect to see so large a percentage of motor vehicle traffic as in the August census. The count was kept of light and heavy one-horse vehicles, light and heavy vehicles with two or more horses, automobile runabouts and automobile touring cars, and as the time of the count and the stations are identical, it will be possible to make some interesting comparisons with the August results.

OFFER OF FREE ROAD TURNED DOWN

HARTFORD, CONN., Oct. 11—The daily press is asking for an explanation of the refusal of the State Highway Commissioners to allow Morton F. Plant to construct a road through East Lyme and Old Lyme at his own expense. Automobilists, especially, can see no reason why an offer to construct \$30,000 worth of macadam and tar road, absolutely free to the State, should have been turned down. There is still a lot of room for road improvement, and every little bit helps. So far the commissioners have refused to make any explanation of their position.

This is all the more inexplicable, when it is considered that the roads of the State are far from being perfect, and each new good road is not only useful, but spurs on other districts.

9,342 AUTOS REGISTERED IN WISCONSIN

MADISON, WIS., Oct. 16—According to figures published by Secretary of State James A. Frear, there are 9,342 automobiles registered in Wisconsin. Of these 40 per cent, are owned in Milwaukee County, amounting to some 3,800 machines. The automobiles in the State represent an investment of \$11,677,500. It is said that about one-seventh of these belong to farmers.

ARRANGEMENTS FOR 1910 REGISTRY

BOSTON, Oct. 18—The Massachusetts Highway Commission has just signed a contract for number plates to be used in registering cars next year. The new motor vehicle law becomes effective then, but by a special provision the commission is permitted to prepare the registration and licensing blanks, plates and the like, so that they can be distributed to applicants, beginning the first of next December. This is so that on the first of January, when the new law as a whole goes into effect, everybody will be equipped with their licenses, registration certificates and plates. The contract that has been signed is for 52,790 number plates. Of this number there are 24,000 pairs for private vehicles, 475 sets for manufacturers and dealers and 20 pairs for use on the motor vehicles of foreign diplomatic representatives who may be in Massachusetts. The contract price is about \$6,900. The 1910 plate will be of the same design as that used this year except that the colors will be reversed.

No decision has yet been reached by the commission as to the manner in which it will determine the horsepower of motors for purposes of assessing the graded registration fees.

Up to October 1 the State had received this year in fees for automobile registrations and licenses a total of \$158,629.52, which is \$43,872.52 more than for the same period last year. There had been registered 22,804 automobiles, 7,570 private operators' licenses had been issued and 8,514 licenses for chauffeurs.

FIRST AUTO SHOW IN SALT LAKE CITY

SALT LAKE CITY, UTAH, Oct. 16—The first automobile show to be held in this part of the country will open in this city Nov. 3 for a ten days' run. It will be held in the two main buildings of the Utah State fair grounds. An elaborate scheme of decoration has been prepared. Circulars with floor plans have been sent to the prominent manufacturers, and judging from the replies received, the floor space will be well filled. Rupert Fritz is president and general manager of the show.

TIME AND PLACE SET FOR BUFFALO SHOW

BUFFALO, N. Y., Oct. 18—Instead of the usual location for the automobile show, Convention Hall, the Automobile Club of Buffalo has selected the Broadway Arsenal as the place for its eighth annual show, which will take place February 14 to 19, 1910. The show will be under the 'highly-successful management of Dai H. Lewis, as in previous years. Mr. Lewis will also manage for the Buffalo Launch Club the third annual Power Boat and Sportsmen's Show. The latter will be staged at Convention Hall, during the week of March 19 to 26, 1910.

What the Clubs Are Doing These Days

LOUISVILLE CLUB'S CLOSELY CONTESTED RUN

LOUISVILLE, Ky., Oct. 16—The endurance and economy contest held by the Louisville Automobile Club ended in what threatened to be a tie between the Ramblers driven by Prince Wells and Harry Ropke. Both had perfect road scores, but the technical committee finally penalized Ropke two-tenths of a point for a loose lamp door, leaving the *Herald* cup to Wells. The Cadillac entered by Ira Bennett won the cup offered to the most economical car, having a low score for oil, water and gasoline. Mrs. Harvey Myers, of Covington, Ky., the only woman driver in the tour, won the prize for using the least water for her Buick, and R. E. Gregory's Cadillac burned the least oil. The Standard Oil Company's booby prizes were won by Harry Ropke and Mrs. Myers for consuming the most gasoline; by Mrs. Myers and George H. Laib for burning the most oil, and by Mr. Laib for using the most water.

Twenty-seven cars participated in the run. From Louisville the course led through Lexington and Paris to Winchester, 170.2 miles, where the night was spent. The return was via Frankfort and Shelbyville, 197.2 miles. The owners' trophy, a silver cup donated by the Louisville Automobile Club, was won by Rambler No. 11, entered by Bertram H. Straus, the car being judged by both reliability and economy. It lost one-tenth point on the road.

MARYLAND CLUB'S PROGRESSIVE CAMPAIGN

BALTIMORE, Oct. 16—With the election of new officers at the meeting this week the Automobile Club of Maryland started a progressive campaign for the winter months. The officers chosen are C. Howard Milliken, president; Osborne I. Yellott, vice-president, Frank W. Darling, secretary (re-elected), and Thomas Young, treasurer. The board of directors consists of James Stone Reese, Edward S. Dickey, Hugh H. Young, Edward C. Wilson, Joseph M. Zamoiski and Joel Nassauer.

Mr. Yellott announced that the committee on road signs, of which he is chairman, has placed signboards in various parts of Baltimore county, particularly in the neighborhood of Lock Raven. Other signs have been placed in the vicinity of Catonsville and Towson, and within a short time other parts of the county will be posted.

Already show talk is in the air, and, in fact, tentative plans for the second annual exhibition under the auspices of the club have been laid out. The members favor an early show this winter. Many Baltimoreans will attend the Atlanta show, and profit by that exhibition in their plans for the local affair.

VARIED TOURNAMENT OF ONE OHIO CLUB

ASHLAND, O., Oct. 16—The tournament held by the Ashland Automobile Club met with much success. The program showed much ingenuity, embracing several novel events, such as the "hospital race," in which the contestants hit a dummy with their cars, stopped, took the dummy on board and carried it back to the judges. The "teeter board" and the "water race" also gave much amusement. Among the winners were: F. Heitz, Dean Ridgley, H. A. Mowrey, Gene Fritzinger, H. Peters and Dr. Ray Ash. The hill climb, one-third of a mile long, was won by H. B. Ridgley in thirty-four seconds.

PITTSBURGH ELECTION AND SHOW ARRANGEMENTS

PITTSBURGH, Oct. 18—The annual election of the Pittsburgh Automobile Club, which was held last week, resulted in the choice of W. N. Murray for president; Frank Saapt, vice-president; J. K. McKeough, secretary, and G. P. Moore, treasurer. The club is starting arrangements for a third automobile show.

NO CLUB RUN TO VANDERBILT FROM HARTFORD

HARTFORD, CONN., Oct. 16—At the meeting of the Automobile Club of Hartford this week it was voted not to attend the Vanderbilt Cup race in a body. Last year the club conducted a successful run to the race, but though assured beforehand of a good parking space, the participants could not see the track on account of the crowds that overran it. However, many of the club members will visit the race this year unattached, and these are already arranging for parking space, in the hope of doing better than last year.

Several new members were elected at the meeting, and the growth of the club in the last six months is regarded as most encouraging. Guy K. Dustin, former secretary of the club, but now resident of New York City, was elected an honorary member, in recognition of his services when in office. Following the regular business meeting, Hiram Percy Maxim gave a talk on his fire-arms muffler and made several demonstrations of the device.

Through the co-operation of the club a hundred elderly people were enabled to attend church service last Sunday, who otherwise would have had to stay at home. For many the "joy ride" was an innovation. Each car carried an escort, and a committee was at the church to care for the old folks on their arrival.

ELECTION TIME FOR MILWAUKEE CLUB, TOO

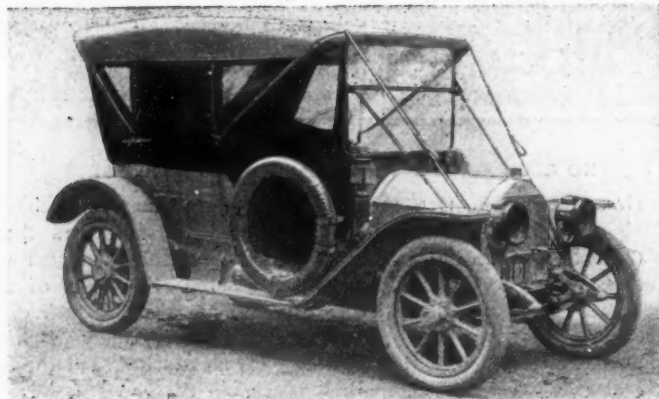
MILWAUKEE, WIS., Oct. 16—Clarke S. Drake was re-elected president of the Milwaukee Automobile Club at the annual meeting of the directors. Faustian Prince was elected first vice-president; George A. West, second vice-president; Arthur C. Brenkle, secretary, and Lee A. Dearholt, treasurer. James T. Drought was again chosen legal counsel. The club is in excellent financial condition, and will proceed to build its clubhouse, long proposed, in the spring. The club owns three acres of land on Blue Mound Road, which will soon become part of the boulevard designed ultimately to connect Milwaukee and Madison, the state capital. The club will also exercise an option on an adjoining acre. It is expected that the show to be held in the Auditorium next spring will provide the necessary funds.

MICHIGAN ASSOCIATION WILL LOOK TO SIGNBOARDS

DETROIT, Oct. 16—Michigan will no longer be the desolate, signboardless waste of the past if the latest effort of the Michigan State Automobile Association works out as expected. By another summer, it is hoped, travelers will be able to tour over all the main highways in the lower part of the State without fear of going wrong. The executive committee of the association, consisting of President Skae and Messrs. George, Ramsey, Warnshuis and Jackson, is back of the move. The first work will be done on the road leading from Detroit through Grand Rapids to Holland.

BOSTON ENDURANCE RUN INDEFINITELY POSTPONED

BOSTON, Oct. 18—At a meeting of the contest committee of the Bay State Automobile Association this evening it was decided to postpone the two-day endurance run scheduled for Thursday and Friday of this week. The entries were due to close to-night and only fourteen cars has been nominated. The committee considered this an insufficient number. It was stated that many automobilists had refused to enter because they had not yet secured their 1910 models. The committee will make another canvas of the trade, and if it is assured of a good-sized entry list will select another date for the run. Otherwise the event may be abandoned.

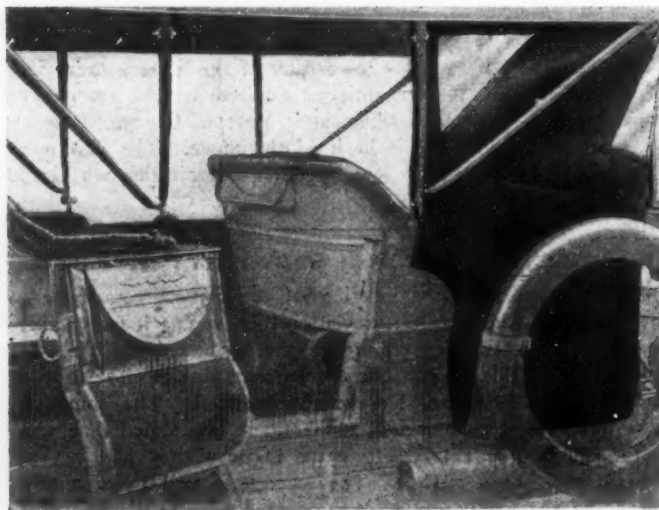


Hanch's Storm Curtains Applied to Marmon Touring Car

NEW TYPE STORM CURTAINS

Anyone who has ever stood out in a pouring rain to put up the storm curtains on his car, getting thoroughly drenched in the process, so that the curtains when put up were useless to him, will appreciate in no ordinary manner the use of a curtain which may be put on from the inside and with as little labor as the other kind. Just as a matter of doing as always has been done, all carriages and automobile curtains fasten on from the outside. A Western man, C. C. Hanch by name, having been through the experience mentioned above with carriages, decided when he purchased his first automobile to have something different.

So he had the top made so as to take inside fasteners for the curtains. This first attempt, as he says, was rather crude, but it showed him that the basic idea was all right. Then, upon the purchase of another and more modern car, a 1910 Marmon "32," he carried out the idea of inside curtains in a satisfactory manner. To quote from his own description: "The top is made with inside curtains, as before, but instead of using the ordinary celluloid storm front, I have employed a standard wind shield for the front and have made the inside curtains to match and fasten to the inside of the frame of the wind shield. The curtains are made in two pieces for each side, and join at the second bow from the front. The appearance and arrangement of the curtains are clearly shown by the annexed cut. In order properly to preserve the curtains when not in use, and still have them instantly accessible, I use a light metal tube, which is fastened with straps back of, and just below, the ledge of the front seat. The location and method of installing the tube are indicated in the second cut. The curtains are rolled and not folded, which

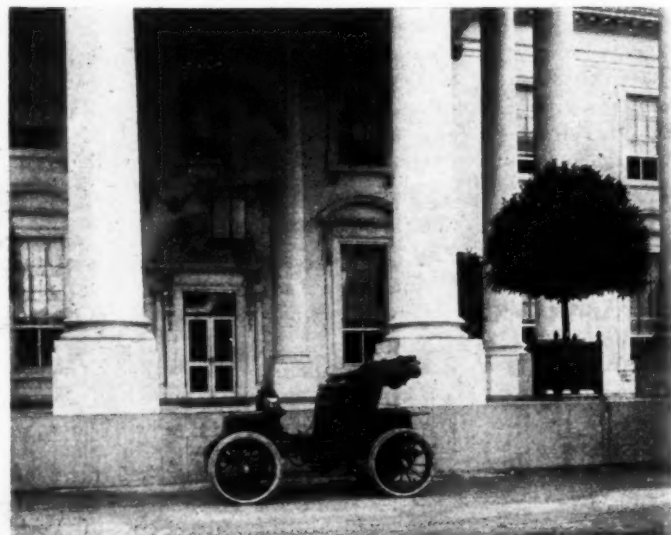


Cylinder Containing Curtains on Running-Board

helps preserve the celluloid windows, and when placed in the tube they do not take up any toe room and are not in the road in any way. It is only a minute's job for the driver, sitting in the front seat, to open the tonneau door, slip out the curtains and suspend them in position without getting out in either mud or rain. I am confident that this will appeal to the motor car user who has been 'through the mill.'

RESTA WOULD DRIVE IN VANDERBILT

Dario Resta, one of the best known foreign racing drivers, is paying a visit to America, and should opportunity present itself, he would drive a car in the Vanderbilt cup race. Resta has been a successful pilot of the Mercedes on the Brooklands track, and one of his most recent appearances was at the wheel of the Lucas Valveless car, which has been attracting considerable attention recently in England. Any concern seeking a thoroughly first-class driver, would improve its chances by effecting an arrangement with Resta, whose European reputation would add to the international character of the Vanderbilt event.



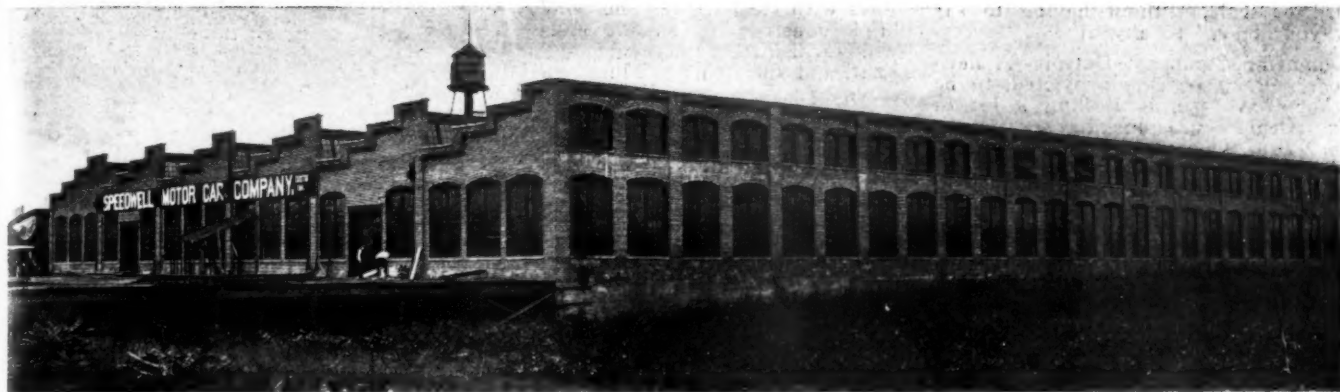
Baker Electric of "First Lady in the Land"

The accompanying illustration shows a Baker Electric drawn up in front of the White House, at Washington, awaiting its owner—"the first lady in the land." It does not show the Exide battery with which it is equipped, but it is there, and the Baker vehicle with the Exide battery form a combination hard to surpass. It is also noteworthy that the King of Siam has ordered a Baker Electric with Exide batteries for his personal use.

TOLEDO AFTER TIRE PLANT

TOLEDO, O., Oct. 18—Indications point to Toledo's automobile industry developing rapidly. Since the location of the Overland Automobile Company in this city, two auto parts factories have been added through the direct influence of President J. N. Willys, and he has just announced that there is every reason to believe that a large tire plant will be induced to move its plant here. While definite details have not yet been announced, it is stated that the company considering a change is located in Akron, and that the Overland company is ready to contract for enough tires to insure the company of all the work it can do. The Toledo Chamber of Commerce is interested in the project, and is ready to offer inducements.

New Orleans, La.—The Parlor Stables at Canal and Galvez streets have been leased by the Glide Automobile Company, the agent for the Ford and Regal cars. The stables will be entirely remodeled to an up-to-date repair shop, garage, and show room.



Addition to Plant of the Speedwell Motor Car Company, Dayton, O., That Will Be Followed by Another of Similar Size

SOME NEWS FOUND DURING FACTORY VISITS

Brush Runabout Company, Detroit—The new plant of the company is shaping up and the parts of the new models are being made up at the plant of the Briscoe Manufacturing Company in the meantime. Everything is going along nicely; the 1910 car is on the road and it is attracting notice and commendation. The new balance scheme makes the single cylinder motor as smooth as a four and the power is all that any autoist will want in a runabout for general and utility service. With 10,000 cars passing through the shop in all stages of completion it taxes the skill of great shop managers to keep things from piling up, but the Briscoe plant is tried and true, having turned out automobile products on a large scale for several years.

McCord Manufacturing Company, Detroit—The best illustration of the way this company is going about it is to scan the illustration of the new addition to the already large plant devoted to turning out radiators, force feed lubricators, air propellers and other accessories. The new addition is capable of housing enough machinery to more than double the output and all the product is contracted for on this basis.

Chalmers-Detroit Motor Company, Detroit, Mich.—This company is now finishing its third large concrete building, and many other preparations are being made to put out this well-known line of cars on a basis as never before.

H. E. Coffin, chief engineer, despite the load he has to shoulder in order to meet the wants of Chalmers-Detroit dealers, showed THE AUTOMOBILE man all there was to be seen, including two bears that wax and grow fat in a cage in the yard, depicting general prosperity at the plant.

Cadillac Motor Car Company, Detroit—Under the guiding hand of the veteran maker of automobiles, H. M. Leland, Cadillac cars for 1910 are being rapidly completed despite any appearance of haste in the well-equipped plant of the company. Everywhere in the vast plant materials are being whipped into shape, and the fine array of plans, patterns, templates, gauges, and other special equipment available, spells result. Readers of THE AUTOMOBILE may be interested to know that the plant of this company has over 90,000 special gigs, gauges, etc., which are used in the process of building automobiles, and they eliminate the personal equation.

Speedwell Motor Car Company, Dayton, O.—Another saw-tooth factory building has been added to the already large plant of the Speedwell people. This building is of brick and steel, with cement floor, and will be occupied by the upholstering and painting departments, which in the past have been sorely cramped for room. The greatly increased Speedwell output for 1910 is being rapidly pushed forward, and another building equal in size to the one

shown in the illustration has been contracted for and will be erected at once.

Hupp Motor Car Company, Detroit—In the new plant of the company, cars are being put together rapidly and the staff is all agog with excitement as the natural outcome of moving into a new plant and building cars at the same time. The little car is becoming a more conspicuous feature in the streets of Detroit every day, and standing in front of the plant for a single hour any day in the week is enough to convince anyone that the cars are being rolled out.

Metzger Manufacturing Company, Detroit, Mich.—This new company, holding in its personnel Messrs. Everitt, Metzger and Kelley, formerly of the E. M. F., is pushing to the fore with the new model, and beyond being busy there is little to be said at the moment excepting that they are making order out of chaos and shaping things for business on a large scale.

Studebaker (E. M. F.) Company, Detroit—Studebaker-Flanders efforts are in the direction of the control of everything that goes to make complete automobiles on a large scale, and anyone who may have given the matter a little attention will readily see that it is a wise man who knows where to get parts these days. As it is, the company has plants either in operation or being whipped into shape to build everything required to make automobiles on a previously un-



New Building That Has Been Added to the Radiator-Making Plant of the McCord Manufacturing Company, Detroit

heard of scale, without having to say "by your leave" to any one.

Demotcar Company, Detroit.—A newcomer, with 3,000 cars projected, to be marketed at \$550, is making a lot of talk. Dealers are flocking to Detroit from Texas, Oregon and Maine to have a look and the promoters of this popular priced car are playing "center rush" in a swift game.

Clark-Carter Automobile Company, Jackson, Mich.—This is a recent one, with ample capital and a well appearing model. The company has purchased the Eber L. Peek property, with its 20,000 feet of floor space, as a nucleus. The Cutting Motor Company, of Newark, N. J., will market the cars, and the first model, now on wheels, is known as the Cutting "40," and will sell at \$1,600.

Rapid Motor Vehicle Company, Pontiac, Mich.—This concern will have something important to say to the users of commercials this year. Things are shaping up at the plant, and besides a small model for light delivery work the three-ton truck will probably be a feature of 1910. It is a good deal of a job to prepare the line for announcement, and at the present time all that can be said is that Rapid trucks are to be up to a fitting standard.

Oakland Motor Car Company, Pontiac, Mich.—With materials coming in from many quarters, and models ready to be duplicated by the thousand, this company is making rapid strides toward an addition to the original plant, which will increase the capacity several times. When THE AUTOMOBILE man called recently one of the large additions, about 60 x 300 feet, four stories high, was under contract to be finished within 15 days after the contractor started to raze the old wooden buildings that clogged the wheels of progress. The buildings are all to be substantial brick affairs and the showing made in five days is evidence of the fact that the contractor will lift the premium. The old Oakland plant is revamped, new hardwood floors are down, and all the plants in the vicinity are absorbed. Jesse Eccleston, representing the sales department of the Oakland, is energizing the situation, and Oakland models, as fast as they come from the shop, are given a critical eye. Automobile Engineer Brush is putting his best licks on the new Oakland \$1,000 car. It is swung right, looks well and has speed.

Inter-State Automobile Company, Muncie, Ind.—Owing to increased demands for Inter-State cars, the Inter-State Automobile Company has now under course of construction an immense addition to its already large plant. The three floors of the new building are 430 feet long and 66 feet wide, which includes a spur running out from one end of the building. Its total floor space will be 85,000 square feet, which added to the old plant will make a total of over 150,000 square feet of floor space. The capacity and output has been increased to five times the number of cars manufactured in 1909 and the company expects to manufacture 2,500 cars for 1910. A spur track will run the entire length on the outside of the building and a large shipping platform will be made for handling shipments without delay. The steel work shown in the illustration was erected in less than two weeks and the same general fireproof construction will be used as used in the other buildings. This is an all steel and window construction on the

sides with steel frames and window and brick construction on the ends. This will furnish the maximum amount of light, and since this building will be devoted to painting, upholstering, finishing and final assembly it will be particularly adaptable for the work. All the departments mentioned will be removed to the new building in plenty of time to get well equipped to handle the 1910 models to better advantage than formerly.

PROMINENT HOOSIERS ORGANIZE

INDIANAPOLIS, Oct. 18.—An imposing group of business men and mechanical engineers forms the Indiana Motor & Mfg. Co., which was incorporated last Saturday. State Auditor John C. Billheimer has been elected president, and Don J. Hayden, a former newspaper man, secretary. The general manager will be Charles B. Riley, until recently secretary of the State Railroad Commission, and John E. Matson, former superintendent of the American Gera Company, will have a similar position in the new concern. Others interested are Charles A. Denby, former U. S. Minister to China; W. F. Crawford, James S. Cruse, Henry C. Thornton, R. A. Lemcke and Claudius C. Jones, all prominent men.

The company has leased the former plant of the American Harness & Leather Company, at Franklin, Ind. General offices will be maintained in Indianapolis. A four-cylinder, 35-horsepower touring car will be the first offering of the company.

RECENT TRADE PUBLICATIONS

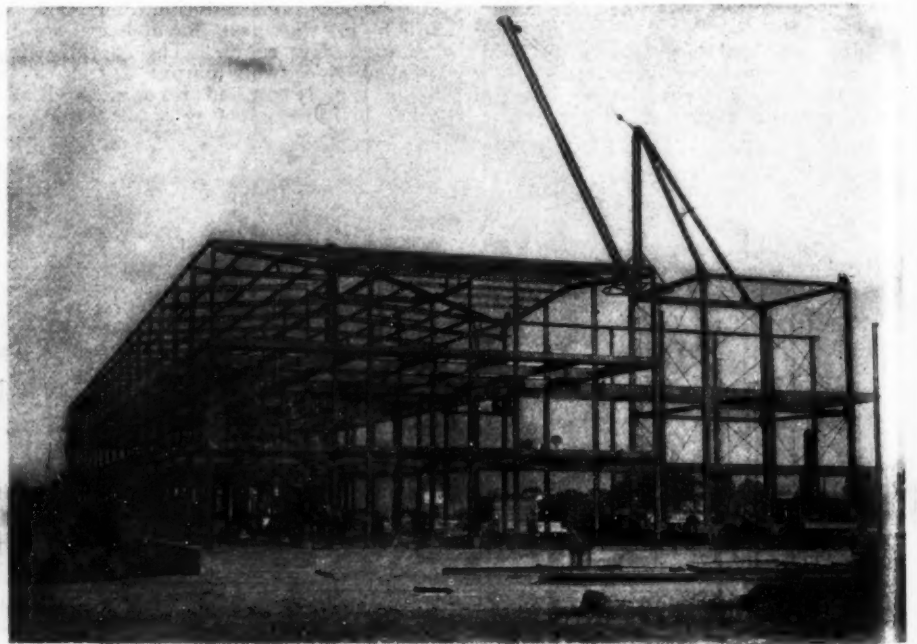
Diamond Rubber Company, Akron, O.—Two neat catalogs of medium size have arrived from the office of this well-known tire manufacturer, one devoted to solid tires for motor buggies and the other to tires for commercial vehicles. The former describes four types of tires, distinguished by their retaining devices: the internal wire, side wire, combination internal and side wire, and clincher. The rims for the first three are of channel shape and are interchangeable; but the clincher type naturally requires a different design. The names of the different types are alone almost sufficient to describe them. The internal wire has two circumferential wires imbedded in the rubber; the side wire has two circumferential wires resting on the ends of short cross wires, and the combination has four long wires as well as the cross ones. The clincher type is made under the Swinehart patent, and is of the familiar grooved shape. The catalog gives all the information necessary to order the tires, and

also describes and lists the machines for applying them to the rims.

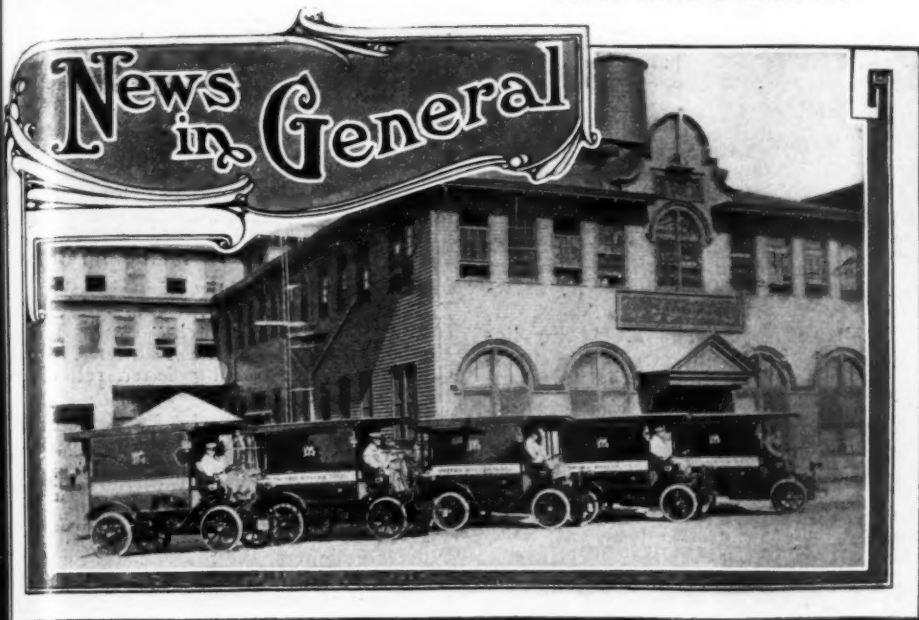
The commercial car catalog describes the new wire mesh base type, as well as the side wire. The wire mesh base tire is built up on three layers of heavy woven wire, giving it great strength, and is secured to the rim by a circular flange clamped by bolts piercing the rim. The flange is a simple flat ring of steel, and the construction is in every way the simplest and strongest conceivable. This type, as well as the side wire, is made double for extra heavy service. The stock sizes run up to 42 by 7-inch single and 42 by 5-inch double. The catalogs are good examples of printing, and are clear and concise in description.

The Waverley Company, Indianapolis.—Green and gray forms the prevailing color scheme of a handsome catalog devoted to the 1910 Waverley Electric. The cover bears an embossed design of a Waverley car against a background of an Italian garden in green, with the name "Waverley" in gilt. Paper and presswork reach the high standard now expected of all catalogs, even those of the most utilitarian articles. The only important change in the mechanism of the Waverley models seems to be the new driving system. The motor and the gears giving the first reduction are carried on the body frame, their shafts lying transversely to the car. From the gear of the first reduction a short, universally jointed propeller shaft runs parallel to the rear axle to the pinion of the second gear reduction, which meshes with a gear mounted on the differential. As the second gears are placed just inside the seat of the left rear spring, the shaft runs nearly the whole width of the car between the spring seats. The movements of the motor due to spring action are thus taken up with comparatively little angularity of the universal joints. In the body design of the Waverleys, stress is laid on the drop frame, which allows the underbody of the machine to carry out the graceful curved lines of the upper work. This frame is used on the brougham, coupe and victoria models. The line is completed by a light runabout, a stanhope, a survey and a roadster.

Winton Motor Carriage Company, Cleveland.—One of the most artistic booklets that has appeared in automobile circles is the 1910 Winton catalog. It hardly seems fair to call it a catalog, as anyone who did not know that "Winton" was the name of an automobile (if any such person can exist) would at first glance take it for a Christmas edition of a popular novelette. It is bound in stiff covers of marble-tinted paper, and the reading matter is printed on heavy glazed stock, profusely illustrated with half-tones. The four full-page pictures of the 1910 Winton "Six" are particularly striking, as the figures of the car stand out boldly on shadow backgrounds of rural landscapes, showing in the distance an attractive country house or bungalow. The car itself, which differs only in the most minor details from the 1909 model, is thoroughly described, and much space is given to setting forth the merits of the six-cylinder motor, in which Winton, it will be remembered, is an enthusiastic believer.



Framework of New Addition to Inter-State Automobile Co., Muncie, Ind.



Autocar Trucks for Philadelphia's Post Office Service

The five trucks pictured above have just been purchased from the makers, the Autocar Company, Ardmore, Pa., by the United States Government, and will be placed in the Postal Service, for the collection of packages and mail in northern and northeastern sections of Philadelphia. Starting in October 1st, they replaced ten horse-drawn vehicles.

Upkeep of Hudson Runabout—The San Francisco agent of the Hudson Motor Car Company recently sent in a statement of the upkeep expense of his demonstrator, which illustrates the economical running of modern light cars. Between August 1 and September 30 this car was driven 3,634 miles, both by the dealer himself and by prospective customers; during this time a record was kept of the gasoline and oil consumed and of the time spent on the car by employees. The total bill amounted to \$52.50, about 1.4 cents per mile. Not one cent was charged for mechanical repairs, and only 75 cents for tire repairs. Storage, of course, was not included. This is the more remarkable when it is considered that for a considerable part of the mileage the car was in the hands of persons more or less inexperienced in its operation.

Reminder of the Oil-Can—Insufficient lubrication is a dangerous thing in an automobile, and perhaps has cost careless owners more money than any other one cause. The engine, gears and axles are almost always lubricated automatically by reliable systems, but there are many parts where no means has been found of dispensing with the humble but useful oil-can. For the benefit of those who are wont to neglect its use, the Pierce-Arrow Company has originated a neat reminder. It takes the shape of a printed chart of instructions, which is pasted to the board under the driver's seat and glazed with material that will withstand any rough usage. The driver cannot lift the cushion of his seat without finding the reminder staring him in the face, and it is always there should the regular instruction book be mislaid.

"Exide" Tells Its Story, and More—The Electric Storage Battery Company, of Philadelphia, has issued an attractive publication on the "Exide Sparking Battery." It contains a very complete description of the company's well-known ignition cell and a rather unusual double-page illustration showing its entire construction at a glance. Every feature which makes this battery durable and

efficient is clearly shown. In addition to this description of the battery three timely articles have been specially written for this publication by the editors of *THE AUTOMOBILE, Motor, and Cycle and Automobile Trade Journal*. The booklet is well worth preserving, as the articles touch upon such subjects as spark plugs, care of the automobile, etc.

Goodrich in Reliability Runs—Twenty-one cars in the recent endurance run at Kansas City were fitted with Goodrich tires, and the Franklin car which won the trophy was among this number. The tires on this car had covered four thousand miles before the run and yet went through the strenuous trip without a puncture. During the 900-mile tour not a single Goodrich tire was taken from its rim. The Elmore, winner of the Munsey tour, also was shod with Goodrichs. During the run of 1,600 miles these tires had but a single puncture; this, too, in spite of the fact that they had been used several thousand miles before the tour.

Rapid Transit in Jersey—Articles of incorporation have been filed by the Suburban Motor Transit Company, with a capital stock of \$100,000. Among those interested are Edwin M. Simpson and former Senator R. F. Pettigrew, of New York City; G. H. Atkinson, C. H. Winans and others. J. A. McClary has been made manager and will make his headquarters in Rahway. The company is to operate an automobile line between Elizabeth and South Amboy in place of the proposed trolley line, which had to be abandoned. Four automobiles will be operated and the company may extend into the taxicab line.

Franklin Freight Shipments—During the year ending September 1 no less than 864 freight cars were loaded with automobiles and shipped from the factory of the H. H. Franklin Mfg. Co. The freight charges totaled \$67,000. The automobile shipments had a total weight of 3,668 tons. Shipments other than those of automobiles numbered 26,518. Incoming freight cars reached the figure of 598. Merchandise inbound aggregated 10,411 tons and outbound, 5,163 tons.

Aeronaut Curtiss Also Becomes Autoist—Glenn H. Curtiss, the well-known aeronaut, has succumbed to the blandishments of a Chalmers-Detroit runabout, possibly due to his association in Paris with R. D. Chapin, the general manager of the Chalmers-Detroit Motor Company. Recently Mr. Curtiss visited Detroit as the guest of Mr. Chapin and incidentally surcharged not a few autoists with aeroplaning enthusiasm.

New Maker of Auto Axles—The Russel Motor Axle Company was recently organized in Detroit with a capital of \$100,000 to manufacture automobile axles on a large scale. The new company is an outgrowth of the Russel Wheel & Foundry Company, one of the largest of local structural steel makers. It has purchased the plant of the Wagner Tool Works and is putting in a complete equipment of machinery.

Salisbury Will Not Move—The Salisbury Wheel and Mfg. Co., of Jamestown, N. Y., denies the report that it is about to move to Peru, Ind. A company known as the Peru Auto Parts Mfg. Co. has been organized in the latter city, and S. H. Penfield, general manager of the Salisbury Company, is to be its president. This fact probably was the cause of the rumor.

Coppock Trucks Reorganized—Fort Wayne, Ind., has been disappointed in its ambition to become the home of an automobile truck factory. The Coppock Motor Car Company, which was considering a transfer to that city, has been reorganized by capitalists of its present location and will henceforth be known as the Decatur Motor Car Company.

Californians Like Racing—The Los Angeles Motor Racing Association has leased for a term of years Ascot Park, one of the best equipped mile tracks in the country, and is planning alterations. The Warner Instrument Company has been requested to arrange, if possible, to time future races on this track with its automatic timing instrument.

Marylanders Hold a Race—The last day of the Cumberland, Md., Fair was signalized by a five-mile match race between the Huffman Automobile Company's Maxwell 30 and the W. W. Garage's Chalmers-Detroit 30, on the half-mile fair grounds track. The Maxwell won in 8:03 3-4. The race was the first one held in the county.

IN AND ABOUT THE AGENCIES

Regal Will Have Boston Branch—A company has been formed to handle in New England the product of the Regal Motor Car Company of Detroit, Mich. The garage of the Regal Motor Company is being located on Massachusetts avenue and a contract has been signed with the parent concern for 300 cars for 1910. In addition to the cars the Boston concern will carry a large stock of parts and will be the New England depot for the delivery of repair parts to Regal owners. This plan will be of the greatest advantage to Regal owners, of which there are now a great number in New England. The new company is backed by N. C. Griffin and A. W. Mutt. The latter will be the active member of the firm.

Hupmobile and Chase, St. Louis—A new automobile agency has been formed here, known as the General Motor Car Company, to represent the Hupmobile and the Chase commercial cars. The office is at 1120 Third National Bank Building and the garage at 4520 Delmar boulevard.

Grout, New York City.—The Imperial Motor Vehicle Company, of 212 West 76th street, New York City, has taken the agency of the Grout car, made by the Grout Automobile Company, of Orange, Mass., for Greater New York and the surrounding territory.

Oldsmobile, Oakland and Brush, Schenectady, N. Y.—H. W. Chubb will distribute the Oldsmobile, Oakland and Brush in Schenectady and vicinity during the coming season. His Olds agency includes Albany, Rensselaer and Schoharie counties.

American and Rapid, Kansas City, Mo.—The Kansas City Rapid Motor and Transportation Company, recently incorporated, has opened quarters at 1420 Woodland avenue and will represent the American and the Rapid truck, as well as the new Westcott.

Cadillac, Cleveland.—The Barger Auto Company, Cadillac agent in this city, has leased the entire first floor of the new Skeel Building on Euclid avenue near East Seventeenth street, and will take possession soon.

Chalmers-Detroit and Hudson, Schenectady, N. Y.—B. A. Burtiss, of the Burtiss garage, will continue the agency for the Chalmers-Detroit and Hudson and will act as distributor for Eastern New York.

Overland, Brooklyn, N. Y.—C. T. Silver is to act as Brooklyn agent for the Overland, with entire control in both Kings and Queens counties. He will shortly open salesrooms at 62 Flatbush avenue.

Oldsmobile, Utica, N. Y.—Harry A. Davis and Whitney A. Clark have formed a partnership and will represent the Oldsmobile in Oneida and Herkimer counties. Their salesroom is at 12 West street.

White, Toledo, O.—In the future the business of the White Company in this city will be looked after by the Wood-Kessler Automobile Company, which will devote its exclusive attention to this line.

Chase Truck, Kansas City, Mo.—The Western Commercial Car Company has opened a salesroom and garage at 911 East Fifteenth street and will act as agent for the Chase auto truck.

Ford, Brooklyn, N. Y.—Bishop, McCormick & Bishop, Inc., have contracted to represent the ford in all Long Island, with the standing of a factory branch. They will appoint sub-agencies.

Winton and Rauch & Lang, Atlanta, Ga.—Herrmann J. Haas, the local representative of the Winton and Rauch & Lang electric, is occupying new quarters in the Masonic Temple.

Oakland, Philadelphia.—Fred Vanderhoff, formerly connected with the Ford and Bergdoll companies, has taken the agency for the Oakland and will locate on a salesroom soon.

Fal-Car and Woods, Atlanta, Ga.—The Jackson-Cerf Motor Company has been formed to handle the Fal-Car and the Woods electric, with a temporary office at 12 Whitehall street.

Haynes and Matheson, Atlanta, Ga.—The Corker Motor Car Company has opened a salesroom at Fairlie and James streets, where it will show the Haynes and Matheson cars.

Lozier, Kansas City, Mo.—The E. R. Hunnewell Motor Car Company, of 3816 Main street, has contracted for the representation of the Lozier during the coming season.

Haynes and Detroit, Denver.—The Krebs-Covington Company has opened a salesroom at 1620 Broadway and will represent the Haynes and Detroit electric.

Rider-Lewis, Birmingham, Ala.—James J. O'Toole, sales manager of the Rider-Lewis Company, has placed the agency for his car with T. S. Smith & Sons.

Baker, Kansas City, Mo.—The Flack Automobile Company will henceforth act as agent for the Baker electric, at its salesroom at 3816 Main street.

Empire, Boston.—The S. M. Supplies Company, of Lincoln street, has taken the agency in this city for the new Empire runabout.

Cadillac, St. Louis.—The Bagnell Company, local agent for the Cadillac, has removed to its new salesroom at 4160 Olive street.

PERSONAL TRADE MENTION

Ezra Kirk Rejoins Rainier.—Ezra E. Kirk has resumed his former position with the Rainier Motor Company as Western manager of sales. Mr. Kirk is one of the best-known automobile men in America, having been identified with the industry from its infancy as a manufacturer and later in various executive capacities. He was maker of the Yale car, which was put out by the Kirk Bicycle Company, of which he was one of the owners. He later became sales manager for the E. R. Thomas Motor Company, and then factory manager for the Rainier Motor Company. Recently he was Western manager of the Herreshoff Motor Company, terminating that connection to resume his place with the Rainier. The Rainier Motor Company anticipates marketing 500 big cars during the season of 1910, and 200 of these cars have been assigned to New York; the remainder will be marketed through new agencies now being established in various large cities.

Allen Shelden, president of the Motor Company, Philadelphia agent for the Premier, received a unique tribute last week. Unknown to him, some fifty local Premier owners gathered to banquet him, delegating to H. E. Grant the job of abducting Mr. Shelden for the occasion. The unconscious guest of honor accepted an invitation to ride. While driving leisurely along, Mr. Grant suddenly swerved the car onto the sidewalk and through a hotel door (which had been prepared for the occasion) and landed Mr. Shelden in the midst of the banqueters.

Edward S. Korb has been appointed press agent of the Tenth National Automobile Show, to be held in Madison Square Garden, New York. Arthur N. Jervis, the former occupant of the position, is now devoting his entire time to the duties of advertising manager of the American Locomotive Company. In view of the fact that Mr. Korb in the past was Mr. Jervis' assistant, it is assured that the work will be capably handled.

D. E. MacCarthy has sold the controlling interest of the General Mfg. Co., parts makers, of Elkhart, Ind., of which he was president, to A. T. Welles, of Elkhart. Mr. MacCarthy has been connected with the Burroughs Adding Machine Company and the Westinghouse Electric Company. His future plans are unknown, but it is safe to say that he will locate in the automobile industry.

R. S. de Mitkiewicz, member of the Gas Power section of the A. S. M. E., has

become connected with the Alden Sampson Mfg. Co., of Pittsfield, Mass. Mr. de Mitkiewicz will be associated with the New York office, 115 Broadway, as power sales engineer.

"Archie" Hughes and W. J. Foss, who constitute the Foss-Hughes Motor Car Company of Philadelphia, have opened a branch in Newport, R. I. This company also operates branches in Baltimore, Providence, R. I., and Wilmington, Del.

Raymond S. Joo, formerly with the B. F. Goodrich Company in New York, has assumed the management of the New England branch of the Rainier Motor Company, in the Motor Mart, relieving George T. Gould.

George Crittenden, who has been connected with the Whitten-Gilmore Company, of Boston, has joined the sales department of the American Automobile Company, of that city.

Irvin G. Berryman, formerly assistant superintendent of the Simplex Motor Car Company, Mishawaka, Ind., has been promoted to superintendent in place of Mr. Moore, resigned.

H. C. Henderson, for several years connected with the E. R. Thomas Motor Company in Buffalo, N. Y., has joined the selling force of the Boston branch of that company.

G. Hilton Gantert, who represents the Stearns in Philadelphia, has taken the Quaker City agency for the Herring-Curtiss aeroplane.

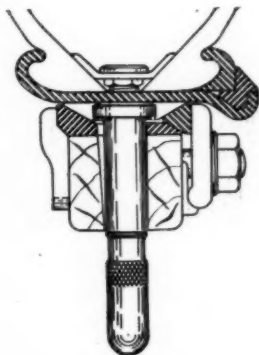
BOSTON TRADESMEN HAVE OUTING

BOSTON, Oct. 16.—The annual fall dinner and outing of the Boston Automobile Dealers' Association was held Wednesday afternoon and evening at Ferncroft Inn, and in many respects it was the most successful gathering ever held by the organization. More than sixty members and guests were present and most of them took advantage of the glorious autumn afternoon for the run to Ferncroft over the old Newburyport turnpike. At the inn secretary Chester I. Campbell had perfected the arrangements in advance, and about seven o'clock the members sat down to one of the famous chicken dinners for which Ferncroft is famous. At the after-dinner exercises President John H. MacAlman presided, and in his usual vigorous fashion, called upon different members for contributions of speech, song, or story.

Among those who responded were E. A. Gilmore, of the Whitten-Gilmore Co.; C. J. Bailey, J. W. Maguire, of the J. W. Maguire Co.; A. B. Henley, of the Franklin branch; C. P. Rockwell, of the Rambler branch; F. P. O'Brien, of the J. W. Maguire Co.; C. A. Gilmore, of the White Co.; J. W. Bowman, of the J. W. Bowman Co., and members of the press. Among others present were J. S. Hathaway, of the White Co.; George H. Lowe, the veteran of the local automobile trade who has been ill for a year or more and who was given a great ovation; F. E. Wing, of the F. E. Wing Motor Car Co.; S. H. Baker, of the Fiat Branch; V. A. Charles, of the Inter-State and Empire agency; H. L. Johnson, of the Premier Branch; J. H. Johnson, of the Buick branch; Harry S. Howlett, of the United Manufacturers; Howard Limric, of the Goodrich branch; William Gray and A. Hollander, of Gray & Davis; Fred Ayres, of the Fisk Co.; John Cooper, of the Ajax Co.; A. P. Underhill, of the Underhill Co.; F. A. Hinchcliffe, of the Winton branch, and others.

Information for Auto Users

Newest in Demountable Rims—At the Southern show, to be opened in Atlanta, November 6, the first showing of the new demountable rims will be made by the Firestone Tire & Rubber Company, Akron, O. This new rim works on an entirely new principle and has many commendable features. It may be used with regular quick detachable tires, in fact, its greatest feature lies in its having been designed for this purpose. It may be used the same as any quick detachable tire after the usual demountable rim changes have all been made, and the ex-



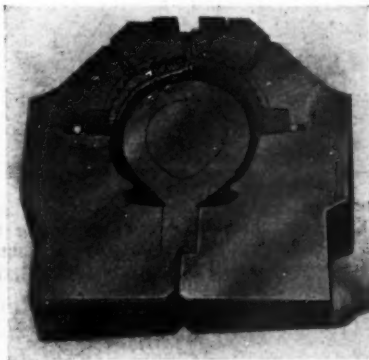
SECTION OF FIRESTONE'S NEW RIM

tra supply of demountable rims used up. This is made possible by fitting over the regular tire valve a sleeve. This is interposed between the dust cap and the base of the quick detachable rim, as the cut shows. No locking nut is used, the dust cap on the valve stem serving to hold the spreader in place or release it when the autoist desires to remove his tire and tube. During this operation the sleeve remains unchanged in its position in the hole through the felloe. When the rim is demounted in the regular way the sleeve, dust cap, etc., slide through the hole in the felloe. This gives the new rim a double value to the motoring public, in that it may first be used as a demountable rim to the extent of the number of spare tires owned or carried, in which it possesses all of the many features of a demountable. Beyond that the second and different feature of using the tire itself and independently of the rim, as a quick detachable tire comes into use. This double purpose rim and tire combination should meet with instant favor. On account of the trouble and bother with staybolts this concern has practically dropped the exclusive clincher demountable rim, so it announces. At the same show the new tires will also be exhibited. On all of the 1910 tires the thickness of the tread has been increased.

Alumaloyd, a New Sheet Metal—In seeking a substitute for sheet iron and sheet aluminum for various automobile purposes, each of these possessing some defect, the Spark Rolling Mill Company, Canton, O., hit upon the happy combination of a special analysis rolled sheet

steel, with a smooth, velvet-like coating of aluminum. This combination gives all of the strength and rigidity of the ordinary steel sheet, as well as the admirable surface and appearance of aluminum. The big advantage to the body builder in the use of this metal is that the sheets are ready for instant use, and need not the slow and costly sorting, cleaning, and other preparing actions that the steel does. In the paint shop this metal is a money saver, since its use eliminates sand-papering, filling, rough stuff, putty-glazing and pumice-stoning operations. Each one of these represents an outlay of time as well as money, so that in saving them the total represents quite a large economy. The sheets of Alumaloyd are available in all standard U. S. gauges from 16 to 28, and come in four sizes of sheet.

New and Different Tire Mold—Just so long as experts differ on the relative merits of the molded and the wrapped tread processes for manufacturing automobile and other tires, just so long will the Akron-Williams tire mold, made by the Williams Foundry & Machine Co., Akron, O., enjoy much popularity. The reason for this is because the mold includes the best features of both processes without any of their disadvantages. The cut shows the construction of this mold. It consists of two halves, pierced by numerous holes, which permit the circulation of steam, and the escape of the water of condensation as well as gases which form. The inner surfaces are corrugated, and against these corrugations is inserted a brass wire gauze. The latter is tightly stretched and is held in place by the circumferential wire soldered to it. It is also held by the additional steel locking rings. Next to this is a layer of duck or canvas, while the tire beads and side walls are formed between the iron side mold and the core. The tread is formed between the fabric and the core,



AKRON-WILLIAMS TIRE MOLD

while the profile of the corrugations forms the desired shape of the exterior of the tire. The big advantage of this mold is that it gives full mold pressure to the side walls and bead of the tire. This mold gives the resulting tire a fab-

ric-like appearance, while actually it is rubber. Besides a pleasing appearance, this partly roughened surface wears very well.

Very Handy Size of Meter—With the increasing use and appreciation of the value of accurate testing instruments for the ignition current, has come a demand for different sizes of such instruments from those previously made. In response to this demand, or rather, anticipating it, the Hoyt Electrical Instrument Works, Penacook, N. H., has brought out a pocket ammeter. This is shown in the cut and possesses all of the valuable features of larger and bulkier meters, besides being approximately the size of a



POCKET SIZE HOYT AMMETER

No. 16 gentleman's watch. Since this small and very convenient size will allow of carrying it around in the vest pocket, a large demand for the size is anticipated. Aside from the size, a novel feature of much value is the silver plated metal scale, which combines accuracy and durability with tastiness in design. Despite its small size, this meter is made from carefully standardized parts, designed and finished with unusual accuracy. The lettering on the dial has been changed to make it more legible, a valuable thing in conjunction with the reduction in size.

New Form of Clutch—There are several inherent disadvantages in each and every form of clutch now in use, which inventors and designers have sought to eliminate but without success. These are large diameter and heavy weight. If the clutch is made small, it must be heavy, and if made large so as to reduce the weight, the rotating force, or inertia, which tends to keep it spinning, is increased in proportion, being dependent upon both the linear speed and weight. A new form of clutch, for which it is claimed that it may be light with very small diameter, is that invented and just put on the market by W. L. Archer, Burlington, Vt. It is claimed by the inventor that a rotating member eight inches in diameter and weighing less than ten pounds all told, will take care of a forty-horse motor without slipping, or seizing. The principle is a combination of an external contracting and an internal expanding band on the same drum, but so arranged that centrifugal force in one is neutralized by that in the other, and that both clutches positively follow the lever, nothing being left to springs, so that the clutch can be handled without strains, noise, or bother. It is very cheap and simple to build and maintain, is not sensitive to oil or water. The same principle is applicable to braking effects, in which case the common drum on the rear wheel may be reduced in diameter without sacrifice of braking surfaces.

INDEX TO ADVERTISERS

Acetylene Gas Illuminating Co.	57	Dietz Co., R. E.	107	Lavalette & Co.	59	Riess & Co., Chas. E.	70
Adams Co.	82	Dixon Crucible Co., Joseph	61	Leather Tire Goods Co.	76	Royal Equipment Co.	57
Airless Tire Co.	82	Driggs-Seabury Ordnance Corp.	60	Lehman Mfg. Co., J. H.	67	Rushmore Dynamo Works	114
Air-Tight Steel Tank Co.	85	Dow Mfg. Co.	91	Lexington Motor Car Co.	78		
Ajax-Grieb Rubber Co.	59			Lobee Pump & Machinery Co.	57		
American Ball Bearing Co.	66	Eames Mfg. Co.	77	Locomobile Co. of America	59	Salisbury Wheel & Mfg. Co.	60
American Motor Car Co.	80	Edmunds & Jones Mfg. Co.	62			Schrader's Sons, A.	57
American Motor Truck Co.	61	Eldredge Electric Mfg. Co.	57	M. & E. Mfg. Co.	62	Schridder, Wm.	57
American Sales Co.	93	Electric Storage Battery Co.	104-105	Mason Automobile Co.	80	Schubert Bros. Gear Co.	59
Apple Electric Co.	61			Masury & Son, John W.	86	Selden Motor Vehicle Co.	67
Ashton Valve Co.	57	Empire Tire Co.	76	Matheson Automobile Co.	98	Shaler Co., C. A.	71
Atwater-Kent Mfg. Works	100	Erie Foundry Co.	72	Maxwell-Briscoe Motor Co.	76	Shortsville Wheel Co.	67
Austro-American Separator Co.	58	Excelsior Supply Co.	68	Mayo Radiator Co.	cover	Sireno Co.	71
Austin Automobile Co.	79	Excelsior Tire Co.	56	McCullough - Dalzell Crucible Co.	66	Skinner & Skinner	84
Auto Car Mfg. Co.	85			Metz Co.	80	Slama Tire Protector Co.	64
Automobile Blue Book Pub. Co.	65	F.-B. Co.	73	Meyers Auto Top Co.	59	Smith Co., A. O.	81
Auto Tire Reinforcement Co.	76	F. H. B. Co.	66	Michelin Tire Co.	72	Spacke Machine Co., F. W.	60
Auto Waste Co.	57	Fal Motor Co.	78	Midland Motor Co.	80	Spare Motor Wheel of America	75
Auto & Supply Mfg. Co.	57	Firestone Tire & Rubber Co.	63	Miller, Albert R.	106	Speedwell Motor Car Co.	77
		Fisk Rubber Co.	92	Miller, Chas. E.	89	Spicer Universal Joint Mfg. Co.	58
B-C-K Motor Car Co.	79	Flentje, Ernest	74	Milwaukee Auto Specialty Co.	71	Spitzl Mfg. Co.	71
Babcock Electric Carriage Co.	88	Ford Motor Car Co.	77	Mitchell Motor Car Co.	92	Sprague Umbrella Co.	74
Badger Motor Car Co.	98	Franklin Mfg. Co., H. H.	79	Moline Automobile Co.	73	Standard Co.	89
Baldwin Chain & Mfg. Co.	58	Fried-Osterman Co.	96	Monitor Automobile Works	81	Standard Connecting Rod Co.	61
Banker Windshield Co.	72			Moon Motor Car Co.	59	Standard Roller Bearing Co.	58
Barndt-Johnson Auto Supply Co.	73	Gaeth Automobile Co.	80	Mora Co.	cover	Standard Sales Co.	57
Beaver Mfg. Co.	72	Gardner Co.	85	Morgan & Wright	68	Standard Sheet Metal Co.	86
Bellfuss Motor Co.	71	Gardner Engine Starter Co.	77	Morris, E. Mack	78	Standard Welding Co.	63
Benford Mfg. Co.	103	Geizler Bros. Storage Battery Co.	119	Mosler & Co., A. R.	59	Stanley & Patterson	67
Bi-Kal-Cy Aux. Spring Co.	57	Gilliam Mfg. Co.	82	Moss Photo Engraving Co.	93	Star Speedometer Co.	101
Billings & Spencer Co.	56	Goodrich Co., B. F.	60	Motor Appliances Co.	112	Stark Rolling Mill Co.	83
Borbein Auto Co.	59	Goodyear Tire & Rubber Co.	72	Motor Car Equip. Co.	58-73-75	Stearns Co., F. B.	79
Borne-Scrymser Co.	57	Grabowsky Power Wagon Co.	64	Motor Specialty Co.	56	Stevens-Duryea Co.	120
Bosch Magneto Co.	88	Gramm-Logan Motor Car Co.	59	Motz Clincher Tire & Rub. Co.	59	Stewart & Clark Mfg. Co.	87
Boston Auto Gage Co.	57	Grossman Co., Emil	100-61-71	Mutty Co., L. J.	59	St. Louis Car Co.	117
Bowser & Co., S. F.	97	Groat Automobile Co.	113			St. Louis Supplementary Spiral Spring Co.	84
Brennan Motor Co.	73	Guide Motor Lamp Co.	56	N. Y. Auto Lamp Co.	73	Stromberg Motor Device Co.	cover
Bretz Co., J. S.	63-112			N. Y. Gear Works	60	Studebaker Automobile Co.	79
Brown & Co., S. N.	59	Ham Mfg. Co., C. T.	62	N. Y. Sporting Goods Co.	57	Swinehart Clincher Tire & Rubber Co.	60
Brush Runabout Co.	79	Hansen Mfg. Co., O. C.	76	National Brake & Clutch Co.	60	Syracuse Alum. & Bronze Co.	58
Buckeye Jack Mfg. Co.	62	Hardy Co., R. E.	57	National Motor Vehicle Co.	90		
Buckeye Mfg. Co.	80	Harris Oil Co.	71	New Departure Mfg. Co.	104	Thermoid Rubber Co.	63
Buffalo Specialty Co.	57	Hartford Suspension Co.	111	Newark Rivet Works	87	Thomas Motor Co., E. R.	78
Buob & Scheu	59	Hart-Kraft Motor Co.	86	Nicholson Co.	61	Timken Roller Bearing Co.	108
Byrne-Kingston Co.	69	Havoline Oil Co.	cover	Nightingale Whistle Mfg. Co.	57	Timken Detroit Axle Co.	113
		Haynes Automobile Co.	76	Nonkoroda Co.	64	Tray Plate Battery Co.	74
Cadillac Motor Car Co.	59	Helm Electric Co.	103	Nordyke & Marmon Co.	59	Trimont Mfg. Co.	64
Cameron Car Co.	63	Hercules Electric Co.	58	North American Motor Corp.	74	Tucker, C. F.	57
Canton Drop Forging & Mfg. Co.	60	Herz & Co.	95	Northwestern Chemical Co.	59	Turnbull Wagon Co.	56
Carter Car Co.	78	Hess-Bright Co.	90	Nuttall Co., R. D.	58		
Chadwick Engineering Works	63	Hill Dryer Co.	56	Olds Motor Works	59	U. S. Fastener Co.	64
Chalmers-Detroit Motor Co.	94	Hoffecker Co.	75	Orange Machine & Mfg. Co.	72	Unicas Specialty Co.	76
Chicago Flexible Shaft Co.	87	Hoffman, Geo. W.	57	Overland Automobile Co.	81	Universal Auto Spring Co.	78
Cleveland-Canton Spring Co.	60	Hopewell Bros.	57	Owen & Co., R. M.	59	Universal Tire Protector Co.	76
Cleveland Puncture Proof Tire Co.	73	Hotel Gibson House	72	Packard Electric Co.	74	Universal Wind Shield Co.	115
Colgan Co., J. W.	52	Hotel Lafayette Co.	83	Packard Motor Car Co.	127		
Columbia Lubricants Co.	68	Hotel Rochester	83	Palmer & Singer Mfg. Co.	59	Vacuum Oil Co.	83
Comet Electrical Mfg. Co.	76	Hotel Woodstock	62	Pantastote Co.	59	Veeder Mfg. Co.	92
Conn. Tel. & Electric Co.	99	Howard Demountable Rim Co.	87	Parish & Bingham Co.	58	Vehicle Specialty Corp.	62
Continental Caoutchouc Co.	59	Hoyt Electrical Ins. Works	66	Parker, Stearns & Co.	59	Velle Motor Vehicle Co.	85
Continental Motor Mfg. Co.	68	Hupp Motor Car Co.	78	Parry Auto Co.	124	Victor Auto Supply Mfg. Co.	99
Corbin Motor Vehicle Corp.	78	Hydraulic Pressed Steel Co.	72	Peerless Motor Car Co.	cover	Victor Tire Traction Co.	56
Couch & Seeley Co.	102			Pennsylvania Auto Motor Co.	77		
Covert Motor Vehicle Co.	59	Interstate Automobile Co.	80	Perfection Non-Skid Climber Co.	77	W. D. Spring Cushion Tire Co.	75
Croton-Keeton Motor Co.	79	Jackson Automobile Co.	122-123	Perfection Spring Co.	58	Waban Webbing Co.	58
Cullman Wheel Co.	58	Jacobson Machine & Mfg. Co.	72	Peterson Valve Lifter Co.	75	Warner Instrument Co.	81
Cutter, G. A.	75	Jeffery-De Witt Co.	88	Peugeot Freres	60	Warner Mfg. Co.	73
		Jeffery & Co., Thos. B.	125	Pittsfield Spark Coil Co.	cover	Weston Elec. Instrument Co.	110
Dayton Motor Car Co.	128			Prest-O-Life Co.	97-93	Wheeler & Schebler	119
Dayton Rubber Mfg. Co.	59	K.-W. Ignition Co.	82	Prosser & Sons, Thos.	68	White Co.	63
Demotcar Sales Co.	118	Kamlee Co.	84	Quincy - Manchester - Sargent Co.	58	Whitlock Coil Pipe Co.	68
Diamond Chain & Mfg. Co.	58	Kellogg Mfg. Co.	66			Whitney Mfg. Co.	75
Diamond Rubber Co.	70	Kellom Co., Chas. F.	61	Raimes & Co.	57	Widmer Machine Works, C. A.	102
		Keystone Lubricating Co.	101	Rajah Auto Supply Co.	60	Willitt Engine & Carburetor Co.	58
		Kilgore Mfg. Co.	74	Randall-Faichney Co.	85	Winship, W. W.	80
		Kimball Tire Case Co.	74	Regal Motor Car Co.	121	Winton Motor Carriage Co.	116
		Kissel Motor Car Co.	79	Remy Electric Co.	71	Wyman & Gordon Co.	56
		Klaxon Co.	126	Reynolds, Harry H.	62		
		Knapp-Greenwood Co.	63	Rider-Lewis Motor Car Co.	81		
		Knox Auto Co.	91				
		Konigslow, Otto	58				

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